

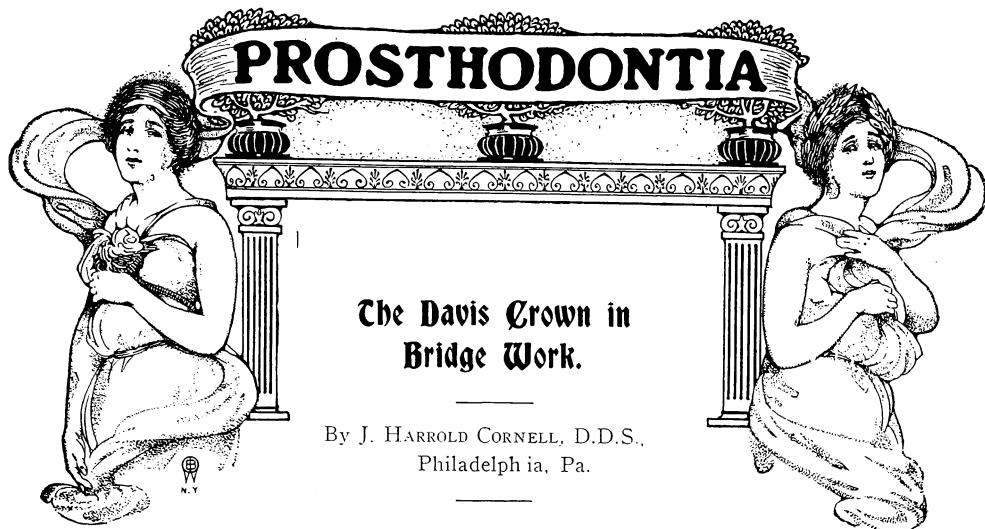
DR. W. C. BARRETT.



NATIONAL ASSOCIATION OF DENTAL FACULTIES AT ASHEVILLE



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## The Davis Crown in Bridge Work.

By J. HARROLD CORNELL, D.D.S.,  
Philadelphia, Pa.

For years the Logan crown has been the mainstay of dentists throughout the country, because of its unquestioned quality, its natural appearance, and its wide advertisement. Nothing can be claimed at the present time against the high standard to which its makers have aimed to make it conform, as the best of its class. But many have been the complaints, recorded on the pages of the *Cosmos* itself, in its Society reports, of inability on the part of dentists to grind an accurate joint because of the presence of the pin.

About four or five years ago, a friend asked me whether I had tried the Davis crowns, and upon learning that I had not, he spoke of their merits and recommended them highly.

Not long afterward I placed one on a root,—with many misgivings as to its staying qualities; for I did not believe the crown existed that would do the work of mastication, if it had a detachable pin. The result was a pleasant surprise, as it was easy to grind a perfect joint at the cervix; and, thanks to the shoulder on a pin made of a metal stronger than platinum, the tooth is in its place today.

Wherever there has been any difficulty in retaining the Davis crown, it has been my experience that a little moisture in the root has been the offending cause, since without exception the pin could not be removed from the porcelain without the aid of a drill. Finding that the pin obtained such a firm hold on the crown, the question next suggested itself: "Would not such a tooth make an admirable substitute for the flat-back teeth of bridge-work?" The first trial in that direction succeeded so well that I have since placed many caps with dummies attached, and bridges of

# PROSTHODONTIA

four to seven teeth, in which Davis crowns took the place of facings. The *modus operandi* was as follows, supposing, for example, that we are required to fill the space vacated by the loss of a first upper bicuspid.

Select a crown with as much extension at the cervix as you can find in the size and shade desired, in order that this neck may press into the gum quite forcibly for the sake of natural appearance. Then cut two pieces of twenty-eight or thirty gauge platinized gold about the size of the base of the porcelain crown or a little larger, and solder them together with 14 kt. solder. Then with the engine and a square-edge wheel, trim the crown on a level with a-a, Fig. 1, until you have reached the level of the depression for the shoulder of the pin, but allowing the cervix to remain undisturbed, Fig. 2.

Drill a hole with a number eight or nine rose-head bur, starting with a chisel drill, through the platform of platinized gold, and fit into it a pin from which most of the radical end has been removed, Fig. 3. Fix with hard wax, from the side opposite the pin, being careful before invest-

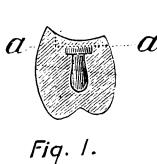


Fig. 1.



Fig. 2.



Fig. 3.



Fig. 4.

ment to see that no wax has flowed out around the shoulder of the pin or you will find solder there afterward. Use a *thin* investment of marble dust and plaster for the same reason, and solder. Grind the platform to fit as in Fig. 2 a, and take an impression over a cap which has been previously fitted to the second bicuspid. If the ridge interferes with the placing of the crown and its platform, cut away its plaster representation and wax the platform just where you want it. Invest and solder cap and platform together.

The first objection that will occur to the sceptic is that the soft tissues will not tolerate the presence of a flat surface such as described in the platform. The truth is they will not if the piece is not pressed into the gum with force enough to preclude the possibility of the entrance of food-stuffs between the two. It is best to select a tooth that exactly fits the space to be filled, and then the overplus of metal insures not only cleanliness, but also, in the course of a few days, presses the gum out and over the neck of the porcelain—a most desirable result. Sometimes, as in the case of a lady in my family, it is necessary on account of the sharpness of the ridge, to use considerable force in placing the finished work in the mouth. In such conditions let me recommend the injection into the gum



of some obtunding solution before setting. Recently it has been my good fortune to see one of the Consolidated Company's pamphlets illustrating the Davis crown mounted on the Townsend backing. This method should simplify the construction of bridges and will far excel the Mason tooth (bridges) and others of that class.

Before passing from the subject of Davis crowns it would be well to refer to the difficulty often experienced by operators in persuading their patients to let the tooth set firmly in position before bringing pressure to bear on it. Formerly I stood at the chair and held the tooth in place for some time. I get perfect results now by flowing over the porcelain and between it and the adjoining teeth a quantity of hard wax, which the patient can remove the next day.

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## **A Gold Cap Crown with Uniform Cusp Reinforcement.**

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By H. B. HARRELL, D.D.S., Gainesville, Texas.

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I notice in *ITEMS OF INTEREST*, November, 1902, "A Rapid Method of Making Shell Crowns" by Dr. F. B. Olwin. In the December issue, Dr. Goslee calls attention to the fact that in the January number he had presented, considered and illustrated the same method. On referring to the January article I find that he had partly described a method that I have been following for about ten years; but he says, on page 13, that the same detail of procedure is applicable to the formation of cusps without the use of models or articulators. The results, however, while perhaps occasionally as artistic, are not so accurate, because no guide for obtaining the correct length of cusps is present, and no opportunity is afforded for proving the articulation and occlusion in the final adjustment and attachment of the cusps to the band, unless it be done directly in the mouth. This is where my method differs from Dr. Goslee's and I think obviates the difficulties which he mentions. This is the part I particularly wish to describe, but it will be more intelligible to give the method in full.

Solder band with 22 karat solder; fit band to root, leaving band as high as possible, sometimes cutting a notch or scallop in the top of the band to make room for an opposing cusp or to give desired shape to the crown. With pliers form the sides of band to desired shape. Place the band on the root, warm a small piece of impression compound and pack it in the open end of the band; then have the patient close his jaws, and

# PROSTHODONTIA

if there is a long opposing cusp that shuts deep into the compound, have the patient grind his jaws. This is to prevent the crown from interfering in chewing. Chill the compound and remove the band with compound in position. Dry the inside of band and compound, melt a little hard wax and pour in the crown, being careful not to drop in enough at a time to soften compound so as to change its shape. This unites the band and compound and acts as a guide in cutting the grooves in carving. If you desire you can now mount on an articulator for an occluding model, but we will proceed without articulator. Trim off compound and carve grinding surface. Always trim the compound so as to expose the edge of band as much as the thickness of the plate from which you expect to swage your cusps (Fig. 1). (I use 24 karat plate rolled almost as thin as I can roll it for forming cusps.) This exposed edge of band forms a small shoulder which acts as a stop when placing on your swaged cusps; it also forms the cap so that when the crown is finished there is no line of solder



Fig. 1.



a



b



c

to be seen, the joint being so perfect, whereas if the shoulder had not been left the finishing would cut through the cap and leave exposed the solder that is used to reinforce the crown.

With your carving finished, mix a little plaster (thin) and spread it on a paper tablet; dab some in the fissures on the grinding surface of crown to prevent air bubbles; then press the grinding surface of the crown into the surface of plaster to just above the edge of band. As soon as the plaster is set, remove the crown from the plaster and trim the face of plaster down to within about one thirty-second of an inch of the shoulder in the impression made by the edge of band. If this leaves a level surface, place the small end of an old iron sewing thimble around the impression and pour it full of Mellott's fusible metal, just as it is beginning to become mushy. If the edge of band has been notched or scalloped, so as to cause an uneven surface around the impression, use a ring of moldine instead of the thimble. Drive this die into a piece of lead for a counter die. Cut a piece of thin 24 karat gold plate and stamp your cusps; this makes a cap. (Fig. 2 a.) Place your cap in position on crown over the carved compound, trim off the flaring edge leaving just enough to burnish over and around the edge of band (Fig. 2 b), and your cap is like a well fitting box lid and can only be put on in its correct position and the



shoulder stops it at the correct place. Remove the cap and dip it into nitric acid to remove lead, etc. Anneal the cap and replace it on the crown; reburnish so as to make the adaptation more perfect; remove the cap, warm the band over a flame, push out the wax and compound, burn off the adhering wax and dip the hot band into sulphuric acid; wash off acid and replace cap. You will find it will only go on in the right position and stop at the right place.

If you are making a single crown, you can solder the cap and band well together with 20 karat solder and use a lower karat solder for reinforcing the grinding surface, but if you are to use it in a bridge, reinforce with 20 karat solder and you can reinforce and solder band and cap together at the same time. To reinforce, and have your grinding surface of uniform thickness and strength, and to confine your solder where you need it, that is, to have it reinforced over the high points as well as in the depressions, and not have it climb the sides of the band, take a piece of thin 24 karat gold plate or platinum (or perhaps platinoïd would answer) and punch it full of holes. Have the punch cut out the pieces from the plate and have the holes large enough that the solder will not fill them until all the space under it is filled. From a small piece of this perforated plate stamp or press a cap, (Fig. 2 c) (you can usually press it enough for practical purposes and avoid having the cap hang in the counter which the holes would cause it to do if stamped). Trim this perforated cap so that it will drop into the crown and lay nicely in the bottom.

This makes your grinding surface double with a uniform space between; fill this space with 20 karat solder if it is for a bridge or a lower karat if you like; for single crowns remove the overlap of the cap and solder from the top of band; when filed and polished, this leaves the line of union between cap and band so fine that it cannot be detected. I have never found it necessary to touch one of these crowns with a stone to give occlusion. This method is the result of assembling ideas gathered from journals and from experience in an effort to produce my ideal of a cap crown.

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## Permanent Attachment of Davis Crowns to Badly Decayed Roots.

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By RICHARD L. SIMPSON, D.D.S., Fincastle, Va.

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Presumably many dentists have experienced difficulty in keeping unbanded crowns in place. Generally speaking, it was due to one of two reasons, viz.: faulty manipulation, or the end of the root was so decayed

## PROSTHODONTIA

that too much cement had to be used. For the first there is no excuse. The following method is offered as a remedy for the second. The method can also be used successfully in cases where crowning would be otherwise impossible. How often have we extracted a root thought to be beyond repair, and found at least three-eighths of an inch of good root? Such roots, if healthy, can and should be saved.

All hypertrophied gum must first be removed under cocaine, and kept away with pellets of cotton until the root is treated and the crown inserted. A brick wall with mortar joints nearly as thick as the bricks is necessarily weaker than one with the ordinary thin stratum of mortar. Yet many dentists disregard this fact when inserting crowns, and then wonder why their crowns do not stay on. We should have just enough cement to hold the crown on and no more.

Fig. 1 illustrates in cross section one of these extreme but common cases, having part of the root decayed so far up under the gum that no ordinary crown could reach it. The crown used is that excellent Davis

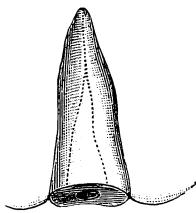


Fig. 1.

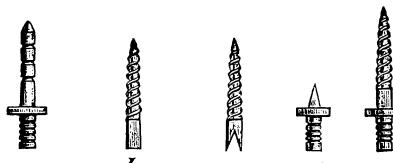


Fig. 2.

crown, and the pin is a combination of the Davis shoulder pin (Fig. 2 a) and the platinoid screw crown pin (Fig. 2 b). The screw part and about an eighth of an inch of the square part of the platinoid pin is used, depending upon the length of the root. A long V-shaped notch is cut into the square end of the platinoid pin (Fig. 2 c) and into this notch is soldered with 20 karat solder the bottom, shoulder and enough of the Davis pin to fill up the V-shaped notch in the platinoid pin (Fig. 2 d). This will give us a composite pin as seen in (Fig. 2 e).

Having drilled out the canal of the root with a bur a little smaller than the screw, fill with soft cement and screw pin to place. Now try the crown on to see that pin is of right length, at which time it can be screwed into root to make it just the length desired. Scrape away all excess of cement and build out root end with amalgam. Shape amalgam to suit case, and when hard, attach crown with cement in the usual way.



### Advantages of the Method.

A screw holds better than a nail. All ordinary pins are nail-shaped, hence are held in place only by the attachment of cement. If screw pin is flattened on one side like the Davis pin, it is an utter impossibility to ever remove it. The V-shaped notch in screw, with corresponding projection on shoulder of Davis pin makes a pin, when soldered, as strong as if made from solid metal. It possesses all the good points of the Davis pin and others peculiarly its own.

Roots not in articulation for a long time are apt to be a little loose and sore at first, but use will restore them to their normal condition.

If the manufacturers would make these pins from a solid piece of metal, they would be much better, as an annealed pin is softer.

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## Successful Crowning of Fractured Roots.

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By H. B. HARRELL, D.D.S., Gainesville, Texas.

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From reading the journals it appears that the subject of crowns is and has been of late receiving considerable attention. It is a subject in which I have always been interested. I believe that all individual modes

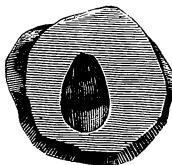


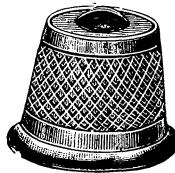
Fig. 1.

of work differ more or less in detail and often possess original features, and that a comprehension of these differences would better qualify one to perfect his own systems. Perhaps some of the methods that have been so satisfactory to me might be of interest to others. I will try to describe how I successfully recrown roots that have been previously crowned, and which by misfortune have had a piece broken from their fronts, one or two-thirds the length of the root. Such roots I believe are seldom, if ever, recrowned. When these cases are presented they usually have the piece still in place but more or less loose.

Remove the loose piece, being careful not to break the fragment nor slit nor damage the gum. Prepare the canal in the remainder of root for a dowel and pack the socket from which the piece was taken to prevent the gum from closing in. Mix a little plaster and spread it on a paper

## PROSTHODONTIA

tablet; into this imbed the gum surface of the piece of root leaving the fractured surface and end exposed. (Fig. 1.) Place the small end of an open ended iron sewing thimble or a ring of moldine around the piece of root and pour it full of fusible metal for a die (Fig. 2 a); into this die drive a large buck shot for the counter (Fig. 2 b); between these dies swage a thin piece of platinum plate. This gives a matrix; if necessary, invest this matrix and flow it full of 24 karat or 22 karat gold. Trim and dress off the extending edges of platinum and you have the fragment of root duplicated in metal. Remove the packing from the socket and place the duplicate in the place from which the piece of root has been taken. Take a measure of the end of root with the metal duplicate in place; make and fit a band. With duplicate and band in place, take an impression of the end of root. Into this impression assemble the band and duplicate.



*a*

*Fig. 2.*



*b*



*Fig. 3.*

Into this run a little investment, remove the impression and solder the band and duplicate together with a high grade solder. Place the band and duplicate in place on root and grind down the front as much as desired, using the band and duplicate as a band; finish the crown as you would a Richmond crown (Fig. 3). Set with cement and when it is pressed home, the duplicate will fit its place in root like a well fitting inlay, cutting off the cement to a fine line and when the surplus cement is removed there will be nothing that will irritate the gum and the gum will not recede but will remain as plump and healthy as ever over the polished surface of gold, and you have a crown equal to a banded Richmond crown. I have had five years experience with these crowns without a complaint and have been surprised that the gum did not recede. I have made about two dozen.

## A New Method of Crowning Badly Broken Down Bicuspid, Using Davis Crowns.

By ROY K. BELDEN, D.M.D., San Francisco, Cal.

How often we meet with bicuspid teeth which are badly destroyed below the gum line, and in which restoration to a suitable point is hardly possible, without utilizing the root canals for our anchorage, thus preventing the use of a pin in the crown. In such cases a very serviceable and artistic crown may be made as follows:

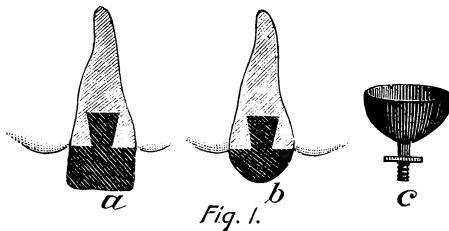


Fig. 1.

After cutting away all softened tissue from the root ream out the canal for the anchorage of the amalgam with which we are to obtain sufficient surface to support a crown. The upper half of root we presuppose to be perfectly sterile and properly filled to apex with gutta percha or other permanent root filling. Now fit a band of copper or thin German silver to the root as though one were making a soldered shell crown. Using this as a matrix, fill with Twentieth Century or other quick-setting and hard amalgam, packing well into our anchorage in root. A cross-cut fissure bur is a very good instrument for roughening the sides of the canal strengthening the retention of the amalgam. It is well to leave the matrix in position till the following day when the amalgam is well set. When the matrix is removed, the appearance will be as in Fig. 1. With a stump wheel now grind a bevel lingually and labially, making an obtuse angle over center of root (Fig. 2), which can be made more nearly a right angle in case there be sufficient length of bite. A gold band and coping is then made to fit this perfectly, just as in making the coping for a Richmond crown, only the double angle and the high center of the coping gives added strength, which is necessary since we cannot depend upon a pin. We have now to grind a Davis crown to fit this coping, which is very easily done by pasting a piece of black articulating paper over the coping. Then grind the porcelain away where it is marked by the black till it fits

perfectly. Next take a Davis pin and solder it in the center of apex of coping; strengthen inside and outside with solder and then grind off the inner extremity close to the angle of coping. (Fig. 3.) Now grind a little of the amalgam from center of face of root to allow for the extra solder where pin comes through the coping and we are ready for setting. The coping is first set with cement and then the Davis crown is cemented upon it. Or, after coping and pin are assembled a bite and impression may be taken and on the articulator the porcelain may be fitted and cemented in place. Then cement upon the abutment in mouth.

The advantage of this method is that no gold is shown on occlusal surface, and if broken another porcelain is readily adjusted.

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### An All-Porcelain Crown Using an American Pinless Tooth for a Basis.

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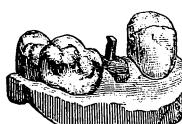
By WILL S. PAYSON, D.D.S., Castine, Me.

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Prepare root convexly bucco-lingually; fit iridio-platinum pin so it fits the canal snugly but will pull out easily. Over the end of root burnish



*Fig. 1.*



*Fig. 2.*



*Fig. 3.*

soft platinum about 36 g. and push the post through (Fig. 1 b). If the post fits the cap close there is no need to solder. If it is for a bicuspid select a pinless tooth used for rubber work, of good shade and wide enough, and grind it roughly to fit over the pin in the mouth. Take an impression with not too soft modeling compound with pin in place; run model using equal parts of plaster and silica which stands the heat. Trim so as to have one tooth on each side of the pin. (Fig. 2.) Place a little of Brewster's body in the crown and place it over the projecting end of pin

and set in place on the model. Put model and all slowly into the furnace and biscuit; take out and detach crown from model by cutting it through where the pin is; then try crown in the mouth and notice the occlusion; if too long, grind, if too short or narrow, add porcelain after reburnishing the cap to end of root if any change has taken place. To add porcelain take the crown in a pin vise by the pin and vibrate the mixed porcelain into place by drawing a knurled handle across the handle of the pin vise and absorb water that rises with white blotting paper.

The pin should extend not more than one-third the way through the crown and no sharp corners left on the pin to tend to split the crown. Take about ten minutes to dry out the crown before putting back into the muffle and do not cool too rapidly after baking. Use an American crown as it holds the color, while the English tooth whitens in the heat of the furnace. Use a strong solution of sulphate of potash to hasten the setting of the plaster and silica.

Grind the glaze off the crown where new porcelain is to be added.

The pin should fit the canal closely as this gives greater strength. In a first bicuspid, where there are two canals, use an iridio-platinum wire about 19 g. bent like a double pointed carpet tack, letting the bend extend into the pinless crown. Fig. 3 shows such a crown completed with two dowels. This makes a strong crown and where fitted over the root convexly prevents the root from splitting and the crown from rotating. Its advantage over the ordinary crown is that it fits the end of the root better than one can be ground to fit, and where one uses pinless teeth for bicuspids and molars in rubber work, as most of us do now, we have a large variety to select from.

Use Brewster's body as that is less likely to become porous if overbaked, as I am told by Dr. Capon.

In place of clay slabs to bake porcelain on, I use slides made of nickel bent to such shapes as are needed, with silica between porcelain and nickel. For twenty-five cents Geo. D. Fiedt & Co., 528 Arch street, Philadelphia, will send a piece of nickel 4 in. x  $2\frac{1}{4}$  in., which will make a number of slides.





## The First Permanent Molar.

By A. H. KETCHAM, D.D.S., Denver, Colo.

*Read before the Colorado State Dental Association at Denver, Colo., June, 1903.*

My object in presenting this paper with photographs of models in occlusion, is to drive another nail in the coffin of that "great crime in dentistry," the extraction of the first permanent molar. But few are there today who champion the extraction of one or all of these molars, when it is possible to save them by any means at our command. Yet I am afraid that we as dentists are not persistent enough in our efforts to save this tooth, often not trying to treat it when we find only roots remaining. That old, old story, "the teeth will move together and close the space," has been told many a parent, but the truth, "the occlusion will be ruined and harmony of features destroyed," is seldom mentioned. The roots are removed and I will show you some of the results.

We will first consider normal occlusion. Fig. 1 is a reproduction from one of the most perfect skulls it has ever been my good fortune to examine. Dr. Richard Summa, who owns the skull, writes me that he desires to have it known as *Secretum Apertum*, "The Secret Revealed," for occlusion as the basis of the science of orthodontia reveals to us the secret of the correction of malposed teeth. Look at the upper first molar, notice the occlusion of the cusps; the mesial inclined plane of the mesio-buccal cusp, occludes with the distal inclined plane, of the mesio-buccal cusp of the lower first molar; the distal inclined plane of the mesio-buccal

## ITEMS OF INTEREST

cusp occludes with the mesial inclined plane of the disto-buccal cusp of the lower, and so on, the upper first molar occluding with three inclined planes of the lower first and one of the lower second molars. The lower first molar occludes with the distal inclined plane of the upper second bicuspid and three inclined planes of the upper first molar. Here we have a picture which impressed upon the brain of the dentist, helps him to put in more serviceable fillings, make better crowns and bridges, and articulate artificial teeth so that, in use they will nearly approach the natural organs.

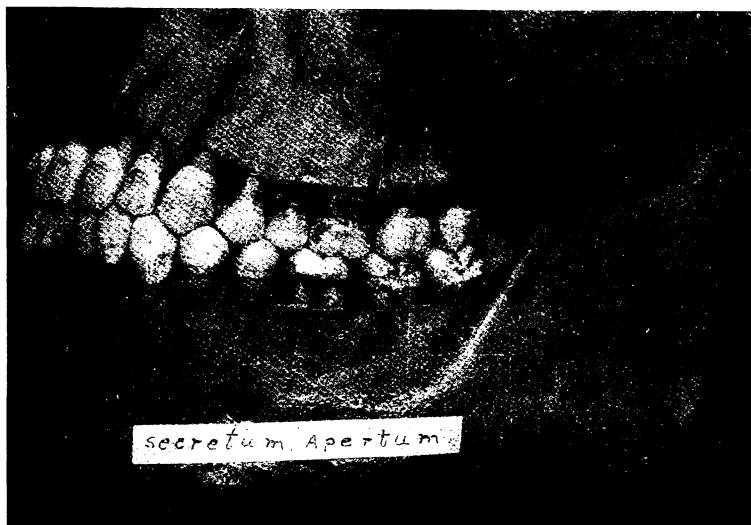


Fig. 1.

As wonderful and beautiful as the interlocking of the cusps (both lingual and buccal) upper and lower may be, the support of the adjoining teeth in the arch is just as important. To quote Angle, "The sizes, forms, interdigitating surfaces, and positions of the teeth in the arches are such as to give to one another, singly and collectively, the greatest possible support in all directions." Imagine then the extraction of the first permanent molar? As well remove the keystone from an archway.

Age 32, Fig. 2. In this case you see the result

**Case 1.** following the extraction of the left molars at sixteen years of age; to make "more room," the upper lateral incisors and lower right cuspid were removed at same sitting. The remaining molars on this side have moved mesially and lingually, tipping

forward so that only the distal cusps touch, making mastication all but impossible. The bicuspids have moved distally and lingually. The effect upon the features (Fig. 3) has been to allow the lips and cheek on left

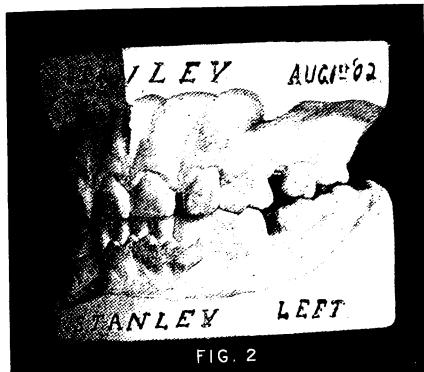


FIG. 2

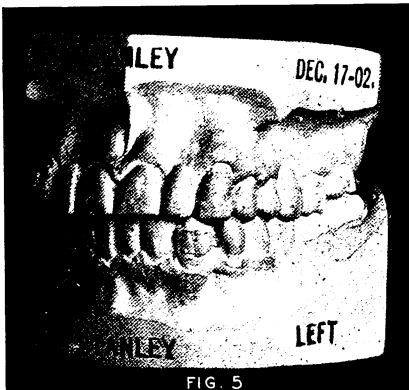


FIG. 5



FIG. 4.

side to sink in. Fig. 4 shows the improvement in the contour of the face gained by my expanding the arches, driving the left molars back, placing all in normal occlusion and restoring the lost teeth. (Fig. 5.)

**Case 11.**

Age 30, Fig. 6. Left first permanent molars extracted at fourteen years of age, also first and second molars on right lower. The lower bicuspids have moved distally and lingually, while there is quite a space between the upper right bicuspids, the molars have moved the same as in Case 1. I made a mistake in the treatment of this case by yielding to the wishes of the patient and not driving the left molars back, as the anticipated in-

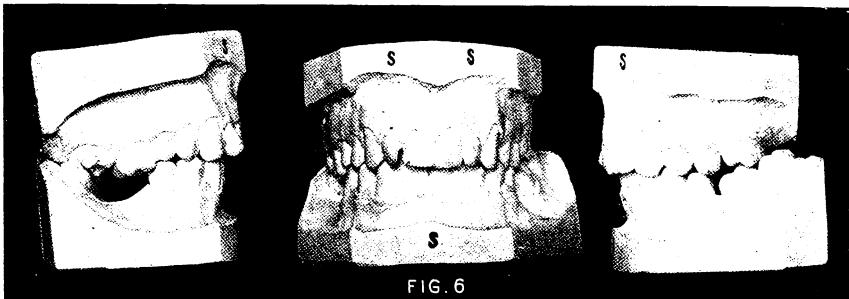


FIG. 6

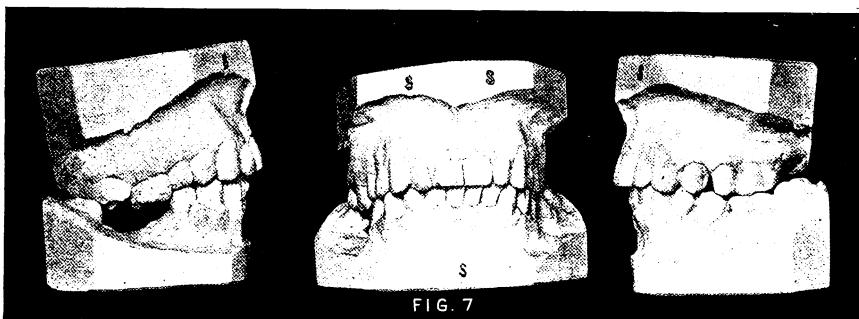


FIG. 7

convenience to him would have been increased but slightly, and the result would have been much better. I expanded the arches, corrected the mal-positions of the anterior teeth, drove the right lower third molar back and upright. Dr. Watson built the left upper second molar out until it touched the second bicuspid, and the mesial cusps down to occlude with lower, by a gold filling, and treated the lower second molar in a like manner; a gold crown on lower second bicuspid was removed and replaced by another with better contour (Fig. 7). This patient is here if any of you gentlemen care to see the result.

# ORTHODONTIA

Age 27, Fig. 8. Lower first molars and right second bicuspid extracted at fourteen years of age; second and third molars have moved forward the width of one cusp; remaining lower bicuspids distally the width of one

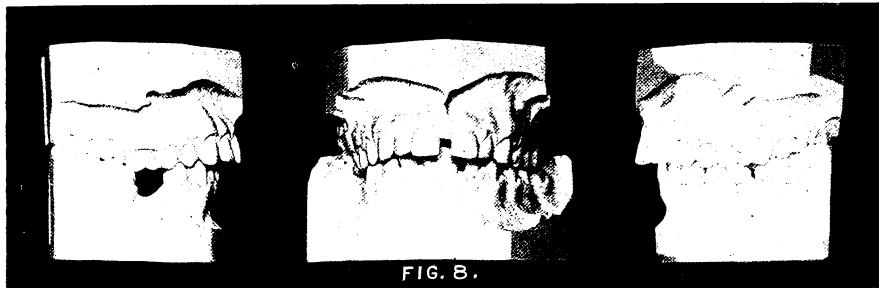


FIG. 8.

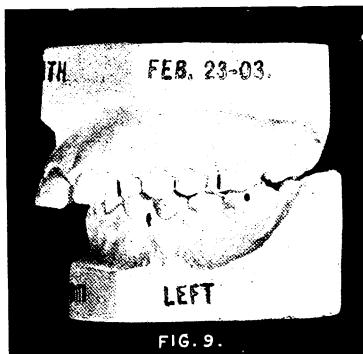


FIG. 9.

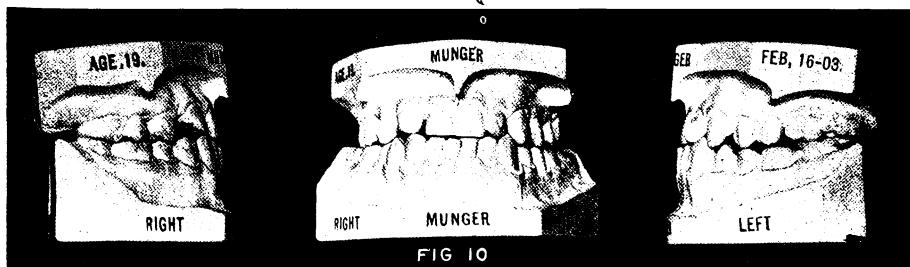


FIG. 10

bicuspid; the incisors and canines moved distally and lingually and separated. The upper anterior teeth did not move lingually and overlapped each other, in an effort to reach the lower, as is usually the case, but remained

## ITEMS OF INTEREST

in their original positions, perhaps held by the abnormal attachment of the *frenum labium* between the central incisors, which causes the separation. The upper lip is normal, while the lower is sunken and too short, appearance of teeth like Class II, Div. I. (Fig. 9).

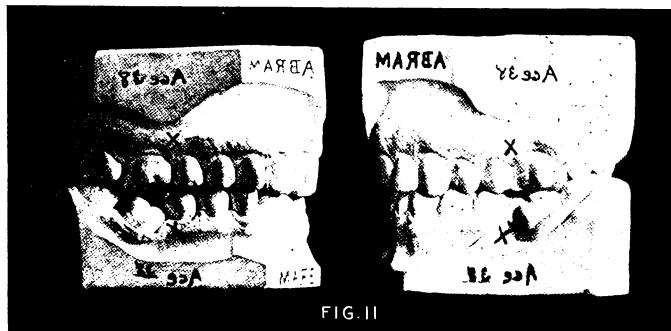


FIG. II

Mr. M., age 19, Fig. 10. Extraction of upper  
**Case 10.** first molars; right bicuspids have moved distally one cusp, and left bicuspid distally one inclined plane; the remaining molars above have moved mesially with the usual result.



FIG. 12

Occlusion was so bad that the young man could not masticate his food, so bolted it. There is considerable lack of development of superior maxillary bones; upper lip was too short and lacked fullness.

## ORTHODONTIA

Probably some one will say, "I agree that the results following the extraction of the first molar after the eruption of the second are deplorable, but believe in the extraction of all the first molars just before eruption of the second molars, as has been advocated by a few gentlemen during the last fifteen years." I wish to say that the photographs of cases treated, shown by these gentlemen, were usually of models with molars and bicuspids in end to end occlusion, making the proper mastication of food impossible, while those with the second molars occluding properly



Fig. 13.

had spaces between molars, bicuspids and anterior teeth, into which fibrous food would pack, and the marring of the lower half of face can be easily imagined.

**Age 38, Fig. 11.** First permanent molars extracted before eruption of second molars; all of the

**Case V.** anterior teeth moved distally and lingually; second and third molars erupted mesially and lingually. The lower second molars tipped mesially to such an extent that only the distal inclined planes of distal cusps touched the uppers so that the use of these teeth in the mastication of food was impossible on account of the pain. Crowns were placed upon them to raise masticating surfaces but gave no relief; finally the patient was sent to Dr. Angle for treatment with the gratifying

ITEMS OF INTEREST

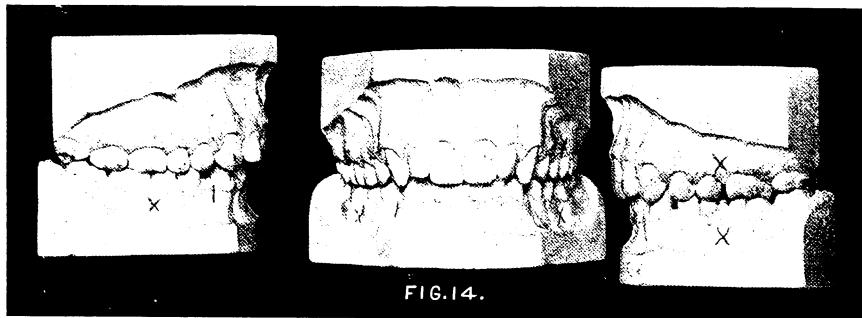


FIG.14.

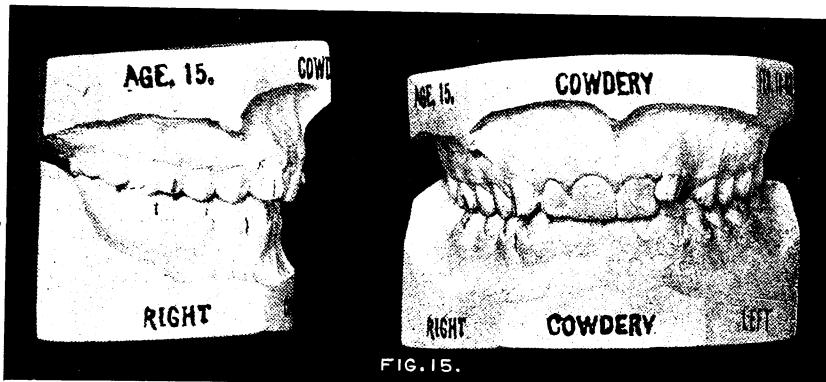


FIG.15.

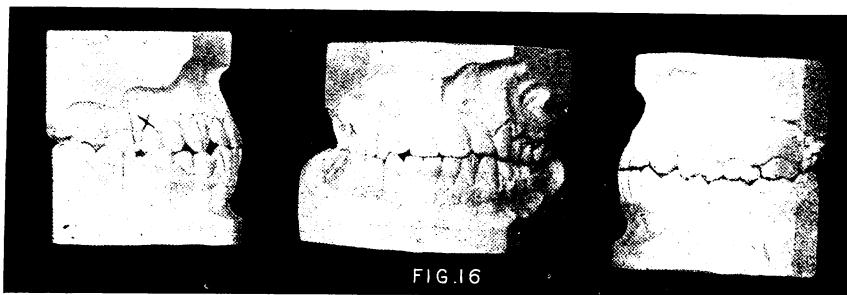


FIG.16

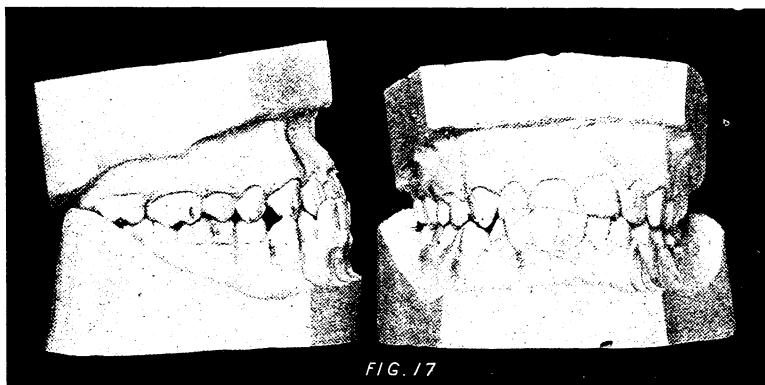
result shown in Fig. 12. The great improvement in the face is shown by illustration in Fig. 13.

Models of cases VI. and VII. were sent me by Dr. Lourie, of Chicago.

Age 20, Fig. 14. All first molars extracted

**Case VI.**

before eruption of second, except right upper, spaces of lower closed by second and third molars moving mesially one cusp, and bicuspids distally one cusp, space between first bicuspids and cuspids, general appearance of face and teeth same as Class II, Div. II. (Fig. 15.)



Age 22, Fig. 16. Right upper first molar extracted

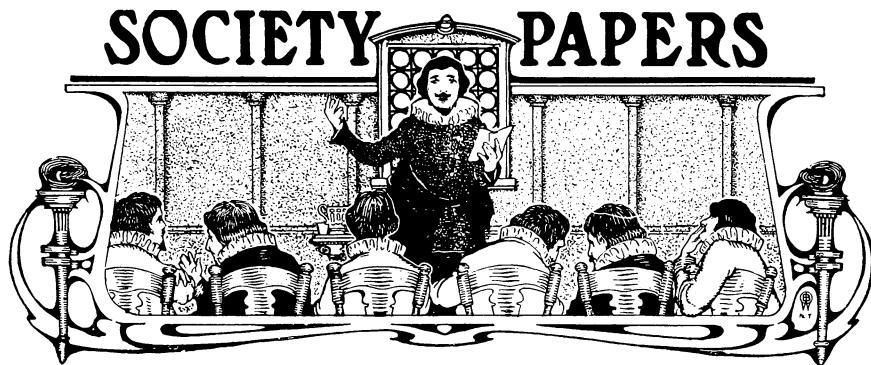
**Case VII.**

before eruption of second, space closed, second and third molars moved mesially one cusp and bicuspids and cuspid distally one cusp. The removing of the keystone from the arch allowed these teeth to move lingually; therefore the arch is a straighter line from between central incisors, on this side, to third molar, than on the opposite side where the teeth are in normal occlusion.

The incisors on right side are in edge to edge "bite" appearing something like the division of Class III. (Fig. 17).

In conclusion I will say that less harm results from the loss of the first molar, after the eruption of the second molar, than if lost before, because if lost then the space may and should be retained to preserve the occlusion and prevent marring the face.





## Requirements for Perfecting Amalgam Fillings.

By Dr. W. E. HARPER, Chicago, Ill.

*Read before the Colorado State Dental Association at Denver, Colo., June, 1903.*

It has been estimated by reliable authorities that amalgam is used for filling at least four-fifths of the cavities prepared in teeth; equally good authorities agree that the average life of amalgam fillings is from three to five years. These statements I regard as approximately true, and it is my conviction that we are not justified in so general a use of this material unless more permanent results can be attained, and this I am convinced is possible with proper cavity preparation, instruments, and instrumentation, and the use of one of the high grade alloys such as may be purchased from any reliable dental supply house.

In the proper use of a high grade, quick-setting alloy we eliminate the chief causes of failure possessed by the slow-setting silver-tin alloys, so generally used until the results of the investigations of amalgam made by Dr. G. V. Black were published in the *Dental Cosmos* of 1895 and 1896. As a result of these investigations the following causes of failure were demonstrated as common to the alloys used up to that date, copper amalgam being practically the only known exception:

**Objectionable Characteristics of Amalgam.** First, excessive shrinkage, impossible to avoid in alloys containing less than sixty-five parts of silver to thirty-five parts of tin, this shrinkage increasing with the age of the alloy, unless fully annealed by heat, in which case we would have the maximum shrinkage.

Second, flow; the disposition of these amalgams to flow or crawl from under intermittent or continuous pressure, such as fillings are exposed



SOCIETY PAPERS

to in biting and mastication; this flow would show by the filling curling from the walls or margins of the cavity, and has been interpreted as "spheroiding."

These two objectionable features, impossible to eliminate from the slow-setting silver-tin alloys by any practical method of manipulation, instrumentation, or cavity preparation, were common causes of failure which have been remedied in the modern high grade alloys, as may be best appreciated by comparison of the following tests, made with annealed alloys, one point representing a fluctuation of 1/10,000 of an inch:

Formula.	Points of Shrinkage.	Points of Expansion.	Flow under 60 lbs. pressure for one hour.	Crushing stress, lbs.	Remarks.
45 Silver } 55 Tin }	11	1	29%	222	A popular formula of a slow-setting soft alloy.
55 Silver 45 Tin	18	0	18%	276	Most popular formula of the slow-setting soft alloys as used in the past.
68 Silver 26 Tin 5 Copper 1 Zinc	0	0	1%	400	Approximate formula of most high grade, quick-setting hard alloys as sold by reliable dealers.

Of the three formulas exhibited, two are of the old slow-setting soft type, each of which shrinks badly and under a continuous pressure of sixty pounds for one hour flow 18 per cent to 29 per cent, their diameter being reduced by the amalgam spreading laterally, and, if in a cavity, would appear as curling from the margins, leaving a perceptible gap.

The crushing stress of this class of amalgams ranges from 200 to 276 pounds, being broken into fragments when exposed to this weight.

With the hard, quick-setting, high grade alloys, we find the shrinkage and expansion eliminated, the flow reduced to one per cent and the crushing stress, or weight required to break the filling, increased from 276 to 400 pounds. With these improvements in the qualities of alloys used at the present time, we should be able to secure much more permanent results in our amalgam operations, if we give the requirements of each case the same consideration which is admitted to be necessary for a gold filling, viz.: correct cavity preparation; separation to restore the interproximate space and the normal contact, with smooth polishing of the filling; and proper mixing and packing of the amalgam, using suitable instruments.





### Deductions from Test Fillings.

The importance of the proper kind of instruments for packing the amalgam cannot be appreciated until one undertakes to make test fillings for microscopic examination, and for testing flow and crushing stress. These test fillings are made under conditions much more favorable than those we work under in the mouth, in spite of which the microscope will plainly show many imperfections in adaptation around the margins, and it requires much experience, care, and skill to eliminate these imperfections.

The results of tests for flow and crushing stress show the marked influence of different methods of packing on the strength of the hardened filling. The following may illustrate and prove of interest in this direction, being the results of tests made by Dr. Wedelstaedt, of St. Paul.

Test fillings four millimeters square were made, using the same alloy with the same proportions of mercury and alloy for each mix and worked under conditions as nearly the same for each as possible. After mixing, the mass was divided into a number of equal parts and each piece when placed in the cavity was given the same condensation or packing as indicated in the table.

No. of blows on each piece.	Weight of blows.	Serrated plunger Diameter of point.	Average stress required to crush the filling.
45	2 lbs. 11 ozs.	1 millimeter	83 lbs.
30	2 lbs. 11 ozs.	1 millimeter	103 lbs.
15	2 lbs. 11 ozs.	1 millimeter	360 lbs.
45	13 ozs.	1 millimeter	473 lbs.
30	13 ozs.	1 millimeter	653 lbs.
15	13 ozs.	1 millimeter	665 lbs.
15	13 ozs.	3 millimeters	633 lbs.
15	2 lbs. 11 ozs.	3 millimeters	900 lbs.
Heavy hand pressure		3 millimeters	900 lbs.

**Outline of  
Cavity Margins.** Cavity preparation, in every detail, should be the same as for gold. On occlusal surfaces, angular or imperfect grooves should be cut out to a point where a perfectly smooth finish of the filling and tooth surface may be made, and all caries uncovered, leaving enamel rods supported by dentine.

In approximal cavities, the buccal and lingual margins should be cut sufficiently wide to permit the excursion of food in mastication to constantly cleanse their full length. The gingival, or cervical margins, should be located just beneath the free margin of the gum except in those cases of excessive recession of the gum, in which case this margin may be cut to a wide portion of the interproximate space.

**Seat or Floor.** The seat or floor should be flat and cut at right angles to the long axis of the tooth, and should be equal in area to the surface of the filling exposed to

mastication to most effectually resist the crushing stress and flow of the amalgam and to afford the greatest security against movement in the cavity and displacement under a heavy bite. By means of the gnathodynamometer, we find most people can close their teeth with a force of at least one hundred pounds, and, in many instances, two to three hundred pounds.

The floor, or seat, is best cut flat with the flat end of an inverted cone or fissure bur held parallel with the long axis of the tooth. By this means we make definite angles in the dentine at the junction of the floor and surrounding walls, adding much to the retention form of the cavity, which enables us to avoid deep undercuts, which are a source of weakness.

**Retention Form.** In occlusal cavities, prepared with the inverted cone or fissure bur as described, the angles of the floor and surrounding wall would be definite and the walls practically parallel to each other. This will afford all necessary retention and the same general preparation may be given to simple buccal and lingual cavities.

In approximal cavities of the bicuspids and molars, it is necessary to cut a step on the occlusal surface, the floor of which must be flat, as it constitutes a portion of the seat, and only slightly dovetailed, because many failures occur as a result of making a narrow neck, the filling breaking at this point.

**Matrix.** All cavities for amalgam must have surrounding walls to resist the necessary pressure in packing the amalgam. If one or more of the walls are missing, the matrix must be applied, and it is important that it be closely adapted to all margins and be tied or held in such manner as to make a solid, unyielding wall. This procedure is essential to perfect adaptation to margins, the vulnerable point in fillings, and will save much time in the final finishing of the filling.

**Instruments.** To most effectually compress a semi-plastic mass of amalgam it must be held under the plunger; for this purpose the face is made flat and serrated, and to permit most effectual compression they are made in two forms, round and oblong, and in sizes such as will fill the opening of the average cavities. In selecting a plunger we should choose one that will about fill the cavity; in so doing the plastic mass is confined in every direction by the walls of the cavity and the serrated face of the plunger, and with one forcible thrust of the plunger the mass is given the maximum condensa-



## ITEMS OF INTEREST

tion and adaptation to walls. With this method of procedure we avoid chopping the mass, the effects of which are so well shown in the results of the tests before mentioned, in which we find that a filling four millimeters square, made with forty-five blows on each piece inserted into the cavity with a round plugger one millimeter in diameter, crushed at eighty-three pounds; while the same sized filling, made with one thrust on each piece inserted, with a plugger three millimeters in diameter, required a weight of nine hundred pounds to crush it.

The effect on adaptation of using a plugger that is much smaller than the opening of the cavity can only be appreciated by making an experimental test under the microscope, in which the amalgam will be seen to move on one side when packed with a small plugger on the other side of the filling, if reasonable force is used.

In using steel pluggers that approximately fit the cavity much care must be exercised to keep the point from contact with the enamel walls, as injury will result and possible failure of the filling. To eliminate this danger I have designed an amalgam plugger-handle which carries vulcanized points of various forms and sizes; the faces of these points are rough enough to prevent the amalgam from creeping when compressed, without serrations; these points are interchangeable and will not injure the enamel walls if brought into contact when packing the amalgam.

I also present for your examination an amalgam trimmer having a flexible blade which can be rotated to any desired angle, enabling the operator to reach any part of the margins of any approximal cavity, mesial or distal, with equal facility. This instrument, I believe, will be found indispensable to the careful amalgam worker for trimming fillings to form after the removal of the matrix.

**Qualities of a Good Alloy.** The qualities of a good alloy such as may be purchased from reliable dealers are as follows: It should be non-shrinking. Its expansion should not exceed  $1/10,000$ . It should not flow. The crushing stress should exceed 300 pounds. It should make a smooth, plastic mass which will very perceptibly harden when compressed. It should be capable of taking a smooth finish. In naming these qualities, I wish it understood that I am not speaking of a perfect filling material, but simply the qualities as found in alloys within every one's reach.

**Proportion of Alloy and Mercury.** The proportion of alloy and mercury is important. Insufficiency or excess will result in a weak and poor filling. The proper proportion should be decided by making an experimental mix. Sufficient mercury should be used to make a smooth, plastic mass, and, for immediate insertion into the cavity, should be as stiff as possible, consistent with taking

the markings of the skin when pressed with the finger in the palm of the hand.

When the proportion of mercury is understood it is best to weigh into separate capsules the alloy and mercury in such quantities as may be found desirable to meet average cavities; this part of the operation may be done at the leisure of the operator or assistant, keeping a small stock on hand. It will be found economical in time and material, and will give exact results. I would suggest that you keep on hand capsules containing ten and sixteen grains, with separate capsules containing the proper quantity of mercury for each; one of either may be used for a small filling or we may take two of them for the larger cavities. By this means the operator will early learn to estimate the quantity required to fill any cavity without waste.

Before mixing the amalgam, the cavity should

**Making the Filling.** be examined and made ready for the immediate insertion of the filling, the necessary instruments selected and placed convenient for use. We now take the required quantities of alloy and mercury and place in a deep glass or Wedgwood mortar, and with pestle rub lightly and quickly until the mercury engages all of the alloy; now turn the mass into the palm of the hand *and knead very thoroughly* until smoothly plastic. If any sloppiness appears, pinch out between the thumb and finger any excess and again knead to proper consistency for insertion—as stiff as possible consistent with taking the skin marking when pressed with the finger. Now divide the mass and take a piece sufficient to cover well the floor of the cavity and with a plugger as large as the cavity will permit, pack each piece once or twice with all the force or pressure the operator can exert or conditions will permit. For the angles and irregular portions of the cavity take a small plugger, packing with light pressure to avoid chopping the mass. With this procedure we will secure the strongest filling and the most perfect adaptation. The cavity should be filled with a slight excess, after which cover the entire filling with the end of the thumb and compress as forcibly as possible. This will remove any excess of mercury developed in the packing, and if maintained a few seconds the filling will set hard enough to remain in adaptation with all margins.

The filling should now remain undisturbed two to four minutes to avoid the danger of injury in trimming away the excess.

This is best accomplished with a large discoid

**Trimming to Form.** excavator on occlusal surfaces, cutting a little at a time toward or along the length of the margins, followed with very light burnishing.





In approximal cavities if a separator has been used we may now loosen, enough to free the buccal and lingual end of the matrix, and then again tighten the separator to permit removal of the matrix without injury to the occlusal portion of the filling. If the separator is not used, the matrix is best removed by drawing it buccally; if drawn occlusally, the occlusal portion of the partially hardened filling will often be broken.

With the matrix removed we now search for over-laps of the filling, and with the amalgam trimmer this is removed and the filling trimmed to shape. If this is well done the final polishing will require very little time and should be done at a second sitting.

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## Extension for Prevention.

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By I. S. BRYANT, D.D.S., La Junta, Colo.

*Read before the Colorado State Dental Association at Denver, Colo., June, 1903.*

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In offering this question for consideration of the Association, I do not expect to present a single new idea. Dr. Black, of Chicago, is entitled to the honor of bringing the subject scientifically before the profession. That it is of vital interest is proved by the discussions in journals by the brightest minds in dentistry. Every day observation shows its necessity by the number of fillings we see in the approximal surfaces of bicuspids and molars that are failing to save the teeth, which fact clearly demonstrates that the majority of dentists do not thoroughly understand that which has been fully demonstrated to be the best way.

I have prepared a few teeth according to my ideas of extension for prevention, which I submit to the inspection of the members of the Association for their criticism and I hope they will criticise without stint. The vital point, as I understand it, is proven beyond a question of doubt by time and experience that where cavities of decay occur on the approximal surfaces of bicuspids and molars, if the margin of the cavity of decay be not extended a sufficient distance so that the joint between the tooth and filling is beyond the contact of the approximal tooth, it is only a question of time when decay around the filling will occur, the quality of the teeth and the care taken of the mouth by the patient being a prime factor.

Intimately connected with this question are many other considerations of vital interest—as the age of the patient, the quality of the teeth, the extent of the decay, the natural space between the teeth, the recession of the gums, the care of the mouth, by the patient, all of which should receive careful consideration.

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## Remarks on Pyorrhœa.

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By E. R. WARNER, D.D.S., Denver, Colo.

*Read before the Colorado State Dental Association at Denver, Colo., June, 1903.*

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In the field of dental labors no lesion offers more perplexing problems for the practitioner of today than pyorrhœa alveolaris. This term is somewhat ambiguous, yet by common usage it has come to include that class of cases having one general symptom common to several varieties of pericementitis, namely, a flow of pus from the alveolus. The term is descriptive of degenerative conditions, progressive loosening of the teeth and calcareous deposits upon the denuded roots. The retentive structures may be evenly or irregularly destroyed, permitting elongation, tilting, and rotation of the affected teeth.

So widely has the term pyorrhœa been used that many practitioners are apt to include under it all forms of gingivitis and to confuse the accumulated food products with actual pus. The essayist has at times quoted verbatim from works on pathology, notably Burchard, because they have in their words been more expressive of the particular point in question.

This trouble is primarily a disease of the pericementum. The pericementum is a somewhat complex structure continuous with the general periosteum of the alveolar process; it is also the periosteum lining the inner alveolar walls; it is the formative structure of the cementum and in addition it acts as a ligament binding the tooth to its articular walls, the alveolus. Able writers of the day divide the cases clinically into three classes: First—Those arising from primary gingivitis with the presence of hard, scaly, dark calculi beneath the gum margin.

Second—Cases which Black describes as phagedenic pericementitis, in which gingivitis may not be marked, early deposits may be entirely absent, but there is necrosis of the pericementum advancing in more or less of an irregular way.

Third—Cases in which degeneration and necrosis of the pericementum and deposits of calculi occur upon some lateral aspect of a tooth root, the gum margin being apparently normal. This class is described as gouty pericementitis. The differentiation between these several conditions is important because, while they all exhibit some features in common, they differ as to causes, clinical histories, prognosis, and treatment. In the first class pericemental degenerations appear to be a secondary feature; in the second the distinguishing feature, and in the third degeneration and death of a circumscribed portion of the pericementum constitutes the first evidence of the developed disease. They all agree in having the diseases of suboxidation or faulty metabolism as general predisposing causes of their occurrence; notable among which are the morbid conditions included under the head of gouty diathesis, the last differing from the others in having a gouty condition as a probable exciting cause of the disease. It is not uncommonly the case that the worst and most persistent cases are those of the strongest type of teeth, singularly free from caries. They are of a type rather characteristic of the bilious and nervous temperaments. The enamel has a flint like hardness, dentine is much increased in translucency, and the pulp chamber much contracted. It has been intimated that a specific form of infection has been responsible for this mode of tooth loss, but thus far attempts to discover the germ have been unsuccessful, although in all cases where pus is found, pyogenic staphylococci and streptococci are undoubtedly attendants. It is very possible that future bacteriological developments will reveal some organism that is an etiological factor.

Inasmuch as brevity should be a desirable feature, much must necessarily be omitted from this paper that otherwise might be said. You will please pardon the essayist if he confines his further remarks wholly to the third class of cases.

**Gouty Pericementitis.** In this class designated as gouty pericementitis we find it of frequent occurrence in persons who are the victims of a gouty or arthritic diathesis. It may be defined as a condition in which degeneration and necrosis of the pericementum begin in some portion of this structure between the apex of the root and the gum margin, usually attended by a deposit of calculi in the diseased area. Like other gouty affections, dental gout rarely makes its appearance before thirty years of age and most frequently between forty and fifty-five years.

**Effects of Excess of Uric Acid.** The conditions called gouty are held to be due to the retention in the circulating fluids of an excess of urates, a waste product of tissue and food metabolism; this excess of material acts as an irritant and

exciting agent in the tissues of the body, producing alterations of function and structure in many tissues and organs, but most palpably in the members of the connective tissue group. Uric acid belongs to a group of animal poisons generated in the living tissues of the body, in the general class of leucomains. It is an oxidation product of albuminous matter. That uric acid is formed instead of a corresponding amount of urea in conditions of faulty oxidation is the general opinion of pathologists of the present day. If for any reason, notably disease of the kidney, the excretion of the urates be interfered with, they accumulate in the circulating fluids, causing an excess of urates without an increased production. Its increase, on the other hand, may be due to undue formation of uric acid. This is observed following upon the ingestion of unusual amounts of nitrogenous foods. After the consumption of malt liquors and sweet wines, particularly champagne, an increase of uric acid is observed, showing that food metabolism, as well as tissue metabolism, is concerned in the production of the excess. If, then, we have a cause of tissue disability, such as disuse of a part with an accumulation of waste products, urates, the deposition of these salts is probable in the ill nourished and debilitated tissue of structure such as small joints. It will be recalled that the metatarso-phalangeal joint from its anatomical situation is one of the joints of the body subjected to the greatest use; and lack of normal exercise of it would be followed by its debility and determine in a gouty patient the deposition of urates in it. These deposits occur first in the least vascular part, upon the surfaces of the articular cartilage, and excite irritation; if present in sufficient quantity, inflammation of the surrounding vascular parts is aroused and necrosis of the tissues, which are the seat of the deposits, occurs. This constitutes the condition of acute gouty outbreak. Any of the joints may be attacked, although usually it is one of the small joints, most frequently the metatarso-phalangeal. Gout or uric acid poisoning may exist as a chronic affection without acute outbreaks; deposits accumulate in small joints, as the fingers, causing stiffness and deformity as the joints are successively affected. An injury to a joint may determine the affection to that joint and any joint may be affected. Gout may exist as an obscure affection without any of the joint affections noted. Disorders of the stomach, liver, kidneys, heart, blood vessels, and lungs may all attend chronic gout and be caused by it. The evidence of connection of obscure conditions, such as headache, lassitude, digestive, circulatory, or respiratory troubles with the gouty condition, may only be made manifest by their relief through antigout therapeusis.

Why should gout attack the teeth of some persons and not those of others? And why should it attack some teeth in preference to others? It must

be remembered that the pericementum is anatomically a ligament as well as a periosteum and that the union of a tooth with its alveolus is a joint. It is attacked for the same reason that any joint may be attacked, because it happens to be a weak articulation. The probable explanation of the selective action of the gout poison for the metatarso-phalangeal articulation is because this joint normally in walking and standing does a great deal of work, receives a blow and pressure with every step, and therefore would suffer early from disease, according to a general physiological law. If it is not vigorously used—and it is not in many gouty patients—its nutrition is disturbed and its vascular currents become sluggish. Analogous conditions may be established in the dental ligament, the pericementum. Owing to an increase in its tenuity and a decrease of its vascular supply its currents become sluggish. If the teeth be used vigorously, the sluggish circulation may be partially counterbalanced; if not, vascular sluggishness is increased and a further predisposition to degenerations is established. Lack of mastication, a common failing in nearly all persons, is very common among gouty persons, particularly excessive eaters, who usually take food requiring little mastication. It is among this class of persons that gingivitis, accompanied by subgingival calculi, is common, producing the first variety of pyorrhoea, which may complicate or be aggravated by the local action of the gout poison.

The prognosis of the disease depends largely upon the length of time an increased quantity of waste products has been in the circulation. One or more teeth may be repeatedly attacked, and if the underlying cause be promptly removed they may partially recover. Because one tooth in a denture is affected it does not necessarily follow that others will become affected, and a single tooth or two teeth may represent the weak articulations or joints of selection of the gout poison, and others remain unaffected. It is usual, however, if the gouty condition be not held in abeyance, for successive teeth to become affected.

The treatment is both general and local, the importance of general therapeutics outweighing that of local measures. The local treatment will depend upon conditions present. Looseness of teeth, malocclusion, infection, the presence of dead and foreign material should be treated much as is indicated in the first two varieties, which are simpler in character. The general therapeutics of gout embraces medicinal agents and regulation of diet, the elimination of the gout poison, and the prevention of its formation. The principle of general therapeutics is diuresis. The agents which increase the secretion of urine have a beneficial effect. The ingestion of large quantities of water raises the blood pressure and flushes the tissues of the body and kidneys, hence elimination of formed waste products is increased. If the water contains salts of potassium the diuretic

effect is increased. Increase of the alkalinity of the blood and the induction of free diuresis are the objects sought. Measures should be advised to increase the oxidizing function. The diet should be of a character which will lessen the formation of urates. The quantity of vegetable food in proportion to animal should be increased, raising the alkalinity of the blood.

Recognizing the predisposition which exists in gouty persons to active pericemental degeneration, the operator should guard against injuries to the pericementum, which might induce a weak articulation and precipitate gouty pericementitis. Such teeth should not be wedged. Injury to the gum margins by the use or improper rubber-dam clamps and ligatures beneath margins may excite the first stages of degeneration, which will only end in the loss of the abused tooth.

In conclusion the essayist wishes, by way of suggestion, to offer a few words to those practitioners who rely upon local treatment in all cases, or to those to whom the term "gouty" is objectionable, that they continue without relaxation their energies in their local treatment, but in addition to make a more careful study of the faulty nutritive changes taking place in the body that they may learn that some constitutional treatment will assist materially in arresting the ravages of this disease.

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### Oral Surgery.

#### A Few of Many Cases Which the Dentist Should Be Able to Diagnose and Treat.

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By Wm. L. ROBERTS, D.D.S., Denver, Colo.

*Read before the Colorado State Dental Association at Denver, Colo., June, 1903.*

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As my title indicates, I am about to speak of some of those diseases and diseased conditions of the oral cavity and jaws that require surgical treatment and which should seldom, in fact, should never be allowed to go out of the dentist's hands. It is eminently essential that even though you may not desire to operate yourself you should be able to properly diagnose any diseased condition. I believe you will agree with me when I make the assertion that the origin of most diseases of the mouth, jaws and associated parts can be traced to diseases of the teeth, and as we are especially interested in the teeth and surrounding parts, I have confined myself almost entirely to some of the most prevalent diseases resulting from septic material discharged from putrescent or decomposing pulps, namely, necrosis, tumors, diseases of the antrum, etc., as frequently met by us in everyday practice.





### **Necrosis.**

First I will consider necrosis, which is the death of a large or small portion of bone in mass and usually the result of absolute and permanent arrest of function; this is unlike caries, for caries is the molecular destruction of bone and corresponds to ulceration of soft parts.

As we meet it in practice, necrosis is commonly due to non-traumatic infective inflammation. It may begin as a general osteitis, bone being destroyed by arrest of circulation, thus cutting off nutrition; or the periosteum proper may be affected, due to its nutrient structures being destroyed. The dead portion of the bone, or sequestrum, is of irregular shape, presenting rough edges, and usually separated from the remaining structures. Separation occurs by a process of demarcation like necrosis of the soft parts, consisting of an area of absorption of calcareous matter. The sequestrum acts as a foreign body and by its continued irritation keeps up a suppurative inflammation of the surrounding parts or tissues. Usually there are fistulous tracts communicating with the exterior.

Necrosis is common in both superior and inferior jaws and in my experience is more frequent in the superior. If the sequestrum is peripheral and has been discharged, the periosteum or the bone may replace the lost tissue. If for any cause the sequestrum is not thrown off, suppurative inflammation may continue for many years and the sequestrum become enveloped in a case of new bone. This is more likely to be true in the inferior jaw, and it is then necessary to break through the new bone to get at the dead part.

Deeply seated pain, inflamed and swollen gums usually precede necrosis, the teeth become loose and sinuses form in every direction, giving exit to pus. On passing a probe, dead bone is easily felt and recognized by the high-pitched and clear note, altogether different from that given out by healthy or carious bone. When separation has taken place, it can generally be recognized by the mobility of the sequestrum. A small sequestrum may make its way to the surface and the thrown off, but the process is slow.

The causes of necrosis are numerous and I will enumerate those which interest us most and are liable to be met with in everyday practice. They are impacted wisdom teeth, septic condition of the teeth, syphilis, phosphorous, mercury, arsenic, etc., etc. The most common of these are syphilis, mercury and arsenic, and I will cite but one or two cases of the many that have come under my observation within the past few years.

**Case from Practice.** Female about sixteen years of age; left inferior, first molar; arsenic had been applied to devitalize pulp about six months previous. I found

tissue and periosteum entirely gone from lingual, buccal, mesial and distal portions of process and extending about two-thirds way over roots of teeth on either side. Process was absorbed or eaten away and tooth very loose; it was removed. I curetted away all necrosed bone, washed out with antiseptic, dried and applied aromatic sulphuric acid freely. A few dressings and the tissues began healing and was nicely restored with the exception of a large depression where process and bone were removed.

Woman of forty-seven years, syphilitic, left inferior

**Case II.** maxilla involved from third molar to first bicuspid. Here I found a typical case with sequestrum,

fistulous openings even to exterior of face. Made long opening and removed sequestrum, curetted, washed out with  $H_2O_2$ , followed with aromatic  $H_2SO_4$  and also through tracts. A few dressings caused external openings to close up and finally the wound in the mouth. (I will pass around the sequestrum which I removed from this case.) I might enumerate several other interesting cases, but think this will suffice.

Besides the local treatment in these cases of necrosis, if I do not send the patient to his physician, I generally advise a tonic and stimulating constitutional treatment, plenty of fresh air and nourishing diet. For a local wash, sanitol liquid or Wampole's antiseptic solution. Of course, the strictest antiseptic precautions should be observed, as the danger from pyemia and septicemia is considerable.

Of diseases of the antrum, I will say but a lit-

**The Antrum.** tle, for I know every one has his pet ideas of opera-

tion and treatment. Diseases of the antrum are usually, but not always, simple in character, easily diagnosed, and as a rule, readily yield to treatment. The average dentist is better qualified than the physician for discovering these conditions at their inception, as he has far greater opportunity for coming in contact with them and should know the anatomy of the region.

The most prominent source of trouble in this cavity is probably some lesion secondary to diseases of the teeth. Although all teeth may be missing and the dental arch appear healthy, yet, we must not jump at the conclusion that the source of trouble lies in some other direction. The root of some one of the molars may have been broken off at time of removal, an ulcer formed and the relation of root with antrum may have been such that it vented into the antrum. A broken root may have been forced into antrum, as I once found. Blows, severe colds and many other minor causes, all are liable to bring about the diseased antrum.

To diagnose a diseased antrum in many cases is easy; in a few, very difficult.

The electric mouth lamp, history, flush and fullness of cheek just



above canine fossa, are all good diagnostic signs, but I have seen them all fail and only the insertion of an aspirator and removal of some of the contents correctly told the tale.

**Treatment.** If the molars are sound, I let them alone and trephine through the bone above roots and on a level with floor of antrum; I make a good large opening,

as large as one's little finger, and larger, if necessary. In this way I am able to know what I am doing, as by using retractors and the electric lamp I can get a pretty good view of the interior, or the floor, at least. I first syringe cavity out with a warm saline solution, then follow with  $H_2O_2$  diluted one-fourth. I am criticised by some for this, but the  $H_2O_2$  boils out the pus and blood better to my way of thinking than anything can flush it out. If I find it necessary to curette, I do it now and also use a bone bur if demanded. When convinced that I have removed the cause, I syringe out with warm saline solution, follow with a saturated solution of boracic acid, or glyco-thymoline one-third strength; place gauze in opening and discharge patient. At subsequent sittings I follow practically the same course as above until no sign of pus appears, when I freshen edges of wound and bring them together with two or three stitches. I never use a canula any more. To say that all the cases always heal up and get well would not be the truth, but fully 90 per cent in patients of good constitution do and I never hear from them again.

Some ask, do you anaesthetize your patients before you operate? Usually I do not. Sometimes I inject a local anaesthetic where opening is to be made, but this only numbs the soft tissue and as soon as I touch the bone, the pain is just as severe. In most of the cases during the past winter at the clinic of the Colorado College of Dental Surgery, I have said nothing to the patient, but just proceeded with the operation, and I think some of you who are present and saw me operate in those clinics will agree with me when I say the patients were good and made very little complaint. If you use a general anaesthetic, you cannot help but keep your mind on the patient and away from the operation. Usually only a few minutes are consumed in opening the antrum and the patient will endure it.

Of the various tumors, wounds, etc., that are brought to our notice and which we ought to be able to diagnose and treat, I might mention and describe a few and I will begin with wounds.

**Wounds.** Accidental wounds of the lips and mouth are usually incised or lacerated. If badly torn, the ragged edges should be smoothly trimmed, washed out with a sublimate solution and secured with interrupted silk sutures. When the wound is through the entire thickness of the lip, the sutures

should include the mucous membrane. A very fine suture should be used in the vermillion border to insure absolute approximation. Adhesive strips are not reliable here. In children the silkworm-gut support should be employed, as it resists the constant strain to which sutures of the parts are subjected in the act of crying.

Diseases of the lips are of various kinds and include epithelioma, lipoma, ulcers, general hypertrophy and fissures.

**Tumors of the Lips and Mouth.** One of the most frequent causes of removal of portions of the lip is the presence of epithelioma. It is a disease of middle and old age, involves usually the lower lip, and occurs in the great majority of instances in males. It may occur without any appreciable cause, but in the majority of cases, the appearance of the neoplasm is preceded by prolonged irritation at the place involved. A jagged or projecting root, large accumulations of tartar at the gingival margin, the habitual use of a pipe stem are frequent causes. Irritation caused by chronic fissure or ulcer of the lip is another symptom. It begins as a small ulcer with rather abrupt margins, in the bottom of which is a dirty granulation tissue, partially hidden by thin pus. In its earlier stages, it is not readily distinguished from the benign ulcer which may be found upon the lip. A preceding history of prolonged irritation should always suggest epithelioma, especially if it occurs after the age of thirty and upon the lower lip. Labial chancre may be differentiated by the indurated base, which is characteristic of this lesion; adenitis in the line of lymphatics along the lower jaw comes on in the earlier stages of syphilis, while in epithelioma the sore may exist for months without perceptible enlargement of the lymphatic glands. In syphilis the appearance of the eruption, together with the history of the case, will lead to correct differentiation. Epithelioma of the lip is a dangerous affection. If neglected, it destroys life in from one to four years. It spreads at times with rapidity. It may confine itself to the soft parts or attack the maxillary and nasal bones. Engorgement of the submental, sublingual, submaxillary and cervical glands is almost inevitable if the disease is not controlled early.

Marsden's paste, while preferable, in epithelioma of the skin is second to the knife in the treatment of this disease in the locality under consideration. The incision should be well away from the infiltrated margin, and if any lymphatic glands are enlarged, they should also be removed. After removal, plastic surgery should be employed in restoring the part to as near the normal condition as possible.

Cystic tumors of the lips are not infrequent, occurring as spherical swellings beneath the mucous membrane. They are caused by obstruction of a duct of a labial follicle, and contain a thick ropy fluid. The treat-

ment involves a careful and thorough excision of the sac. No stitches are usually necessary in these cases, the wounds healing nicely if left alone.

The tumor that is most commonly met in the mouth is the epulo-pulp-fungoid. And right here is where we must be careful to diagnose correctly between this and an odonto-periosteal growth.

The epulo-pulp-fungoid is of common occurrence and generally easy to control. It is a fungoid growth of an exposed degenerating tooth-pulp. It is seen in a thousand cases to one of any other form of epulic growths. As found, they are surrounded by the walls of the pulp chamber or root canal and are diagnosed by finding them pendulous, very vascular and variable in size. Treatment: Cut them out and control hemorrhage with 25 per cent pyrozone or adrenalin.

The other form, simulating the pulp fungoid very closely as to location, but requiring entirely different treatment is the odonto-periosteal growth.

This tumor is also seen to arise from the pulp cavity, but when you come to trace it down with a fine sound, you will find a break, either at the bifurcation if it be a molar, or at the side of the root and is an out-growth of the alveolar membrane. This form then, is not a pulp-fungoid growth. The only treatment known to me is the removal of the tooth, curetting socket or removal of a small portion, by use of bur or bone forceps. Follow this with application of aromatic sulphuric acid and trouble will soon disappear.

While there are several other varieties of epulides, I will speak of but one more and of this one simply because of my extreme good luck in being able to show you a part of the tumor itself. I refer to the erectile form. This bottle contains one-half of the largest epulo erectile tumor that it has ever been my good fortune to see or remove. This specimen I at first diagnosed as an odonto-periosteal growth and with the history as elicited from the family and family physician, I had in my own mind decided it to be malignant. Patient was given a general anæsthetic and only then did I have a chance to make a thorough examination, and to my utter surprise I found it to be a simple erectile epulis which was easily removed and no return. A microscopic examination of the other half was made which settled the malignancy question. Any epulis that you cannot prove to be benign, you must consider cancerous and treat with the latitude given to cancer.

## Arsenic in Cement Powders.

By HERMAN FLECK, Ph.D., Denver, Colo.

*Read before the Colorado State Dental Association at Denver, Colo., June, 1903.*

Due to small quantities of arsenical minerals in almost all zinc ores, the oxide of zinc produced at the smelters invariably contains arsenic.

For commercial reasons and principally to obtain the dull yellow shades of powder, commercial zinc oxide is calcined, whereby it reaches a desired density, and, according to the proportion of iron present, a desired shade.

According to the manner of calcining a trace of arsenic, bound to the zinc as zinc arsenite, remains, or the arsenic is entirely expelled.

It has been the experience of the profession that devitalization of pulps covered with oxyphosphates has occurred, and in numerous instances suspicion has been fixed on the filling material. To verify this suspicion much discussion has arisen, and the fact that arsenic occurs in some powders seemed to furnish the most reasonable clue. For many years the discussion has been in progress and from time to time has also been raised by manufacturers by calamity advertising.

In August, 1899, Dr. W. V. B. Ames again raised the question by a series of experiments which were intended to prove that arsenic is rendered inert by contact with zinc oxide at a red heat. By a similar process he formed a basic zinc arsenic containing 7 per cent of arsenic, and this arsenite, placed in proximity to the pulp, had no ill effects. The experiments have often been quoted since then, as a happy disposal of the arsenic question, but unfortunately a vital point has been overlooked.

The arsenite of zinc is indeed inert, it is true, but can the same be said of the mixture of this arsenite powder with the phosphoric acid liquid compound?

**Experiment.** The following experiment was made to determine this:

Several hard glass tubes with bulb ends were partially filled with a mixture of ten parts arsenious oxide and ninety parts C. P. zinc oxide. They were then sealed and heated to a red heat. The contents were removed and ground to a powder, placed in porcelain crucibles, heated to a full red heat for several hours and then further heated at a higher temperature.

Sufficient of Ames's liquid was mixed quickly with each batch to form a thin mix. (As a matter of common sense, no matter how much powder



is added from this point on, it is certain that if any arsenic is set free in the thin mix, it will be found free in the product of a thick mix.)

The mass was mixed with distilled water after a few minutes and filtered. Basic-zinc arsenite is insoluble in water; so, therefore, any arsenic found in the clear filtrate must be free as highly potent arsenious acid.

It remained to test the clear filtrate with hydrogen sulphide, which in every case produced a copious precipitate of arsenic sulphide. Clearly, arsenious acid would be present in free state in a cement filling made from this powder.

Briefly, then, when arsenic and zinc oxide are heated together, the arsenic is rendered inert, forming zinc arsenite.

When a zinc arsenite powder is mixed with modified phosphoric acid, arsenic is again liberated.

The question of arsenical contamination, however, has repeatedly been approached from another quarter—that of infinitesimal quantities. Just how far the dose of arsenic may be reduced in quantity to produce devitalization has not been determined, I believe, but I think it fair to assume that it must be an imaginable quantity. The question so far has not been reduced to figures.

Out of many samples of commercial zinc oxide uncalcined and calcined, I have gotten results as high (or as low, if you please) as .025 per cent As. 2.03 and as low as zero. I will base my figures on a Western product which gave .016 per cent As. 2.03, a quantity near an average. This oxide calcined at a slow heat in a large furnace with a final temperature of 2,200° F. for three days was assayed for arsenic, taking the enormous quantity of 60 grams for analysis. The quantity of precipitate was confusingly small and not weighable. A Marsh test showed a trace after a prolonged heating.

It is evident that no figure can be given for this calcined product; but let us suppose the impossible—that all the arsenic in the powder not calcined remained in the final calcined product as zinc arsenite:

Pellet weighed .7 grs. Zinc oxide present .42 grams (of this only .18 grams are required by the liquid used in making the pellet\*; but let us assume that the arsenic in entire .42 grams was liberated).

.016 per cent of .42 grs. gives total of .0000672 grams As. 2.03, or a little less than 7/100 of a milligram. This is equivalent to saying that *a cement filling the size of a navy bean would contain of arsenic less than seven hundredths parts of the weight of a fine human hair six inches in length, providing no arsenic escaped in calcining a commercial arsenical zinc oxide.* This result is obtained under grossly exaggerated conditions,

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\*See "Chemistry of Oxyphosphates," ITEMS OF INTEREST, December, 1902.

and while an absurdly small result must be further modified by the following considerations:

1. The pellet is larger than the average filling.
2. Not all of the arsenic in the arsenite present will be liberated.
3. Only an extremely small part of that liberated will be presented to the pulp.

I believe that I have shown an unimaginably small quantity of arsenic, only an infinitesimal portion of which could come into contact with living pulp.

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## Etiology and Surgical Treatment of Congenital Cleft Palate.

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By T. E. CARMODY, M.D., D.D.Sc., D.D.S., Denver, Colo.

*Read before the Colorado State Dental Association at Denver, Colo., June, 1903.*

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The etiology of congenital cleft palate is a subject about which there has been very little written and what has been written, in most cases, gives malnutrition as the main cause, while heredity plays a part which it is hard to determine.

### **Etiology of Cleft Palate.**

Among the later theories is one which seems to be well taken, the theory of Cryer, which, while including the two former, takes as its main point mechanical obstruction to the union of the parts.

As the superior maxillary bones are developed from two lateral maxillary processes, forming the major lateral portions, and two frontal forming the premaxillary, they may develop fully and yet fail to unite. The mandible in its formation is complete in the early part of the second month, while the superior maxillary is not fully formed and the parts united, until the end of the second month. Cryer claims that on account of the position of the child *in utero*, the whole weight can be thrown on the vertex and as the head is flexed so as to bring the mandible in contact with the sternum, it is forced between these processes and acting as a wedge, keeps them from uniting as they should. However, in order that this might be operative, we must have a *liquor amnii* of low specific gravity or small in quantity, for the weight of a two month foetus would not be sufficient, unless outside pressure could be brought to bear, or we have deficient internal support.

One important point, which favors the later theory, is that in children with cleft palate, the alveolar ridge of the superior maxillary is found exactly over that of the inferior, or external to it, while normally you all know it is internal.

I have endeavored to obtain more light on the cause of this deformity and have collected twenty-one cases from the practice of Denver physicians. The most prominent factor seems to be heredity, while malnutrition seems to play little part, for the history of most of these cases shows plainly that the parts were well developed and the children well nourished. From personal observation of the cases operated on by Dr. Brophy during May, June and July of 1902, I believe this is correct. However, none of these theories entirely explains the cause of this deformity and it remains for the future to more fully determine it.

The time at which the operation should be performed is a question about which there has been much discussion, but the operation as performed by Dr. Brophy, during early infancy, seems to be gaining ground rapidly. It is also a question whether the lip or the palate should be operated upon first.

The reasons for operating upon the palate in early infancy and before the lip, are:

First.—Operation on the palate is difficult at best, and you have much better access with the lip open as well as better light, which you will especially need if the cleft runs through the alveolar process.

Second.—The bones are only partially calcified at birth, and can be bent without fracture, and as they are abnormally placed, they should be made to assume their proper position so that they can develop in a normal way; a more firm union will also take place than if the operation be performed later.

Third.—If the child has a normal palate when he begins to talk, he will have no faulty habits to correct, which would be the case if the operation was performed later in life.

Fourth.—After the operation, the muscles are brought into action and develop, instead of atrophy as they will if operation is delayed.

Fifth.—The child is better nourished after the operation. Tait, the distinguished English surgeon, says that one-half the children born with extensive clefts die within a few days after birth.

The shock is less in infants, as the nervous system is not well developed. The element of fear is eliminated, and it is well known that it is a potent factor in producing shock.

I will describe as nearly as possible the way in which Dr. Brophy performs the operation.

After the patient is prepared and under the influence of chloroform, he is placed upon the table in the Trendelenburg position, with head toward the light; the oral and nasal cavities are then thoroughly irrigated with salt solution. The oral speculum is then placed in the mouth and edges of cleft well freshened, not alone the mucous membrane, but the bones as well, so that you get an exudate and close enough approximation so that after the parts have healed you have bony union. Then you raise the lip, and with one of the strong needles inserted back of malar process and high enough to be above the palate process, a strong braided silk loop is carried through to the median line. The other needle is carried through the opposite side so that loops meet, and by passing one loop through the other and drawing through, you have one double strand of silk from one side to the other. By means of this the silver wire No. 20 is drawn through so as to replace the silk as it would not be easy to carry the wire through with the needle. You do the same in front of the malar process so that you now have two silver wires passing through the bones, and it is best to have these double. The perforated lead plates, No. 17 American gauge, made to conform to the contour of the bones, are now placed on each side with the wires passing through the opening, and the wires twisted together until the bones are forced into position.

If the cleft be very wide or the bones rigid, it may be necessary to cut through the malar process. This is done by inserting the knife horizontally through the mucous membrane, so as to bring the point back of the process, and sweeping it backward and forward, cutting a maximum extent of bone with a minimum area of mucous membrane. This done on both sides, it will not be difficult to force the bones together. If we have a protruding premaxillary, it can be forced back at the same time by cutting sub-periosteally a wedge base downward out of vomer, forcing the bone back to place, and fastening there by passing a silver suture through its anterior part or only under the mucous membrane anterior to the bone.

The hemorrhage is slight in this operation, as no large vessels are cut, and the slight oozing can be stopped with hot sponges. The temporary teeth may be disturbed, and at times the germs of the permanent, but these can be disregarded when compared to the benefit of closing the cleft.

The after treatment consists in keeping the uniting surfaces clean with gentle spraying if necessary.

It must not be understood that the palate cannot be successfully operated on later in life, but the results are better, the younger the patient.



If the patient is over six months of age, the procedure is different. Then the bones cannot be forced together, but the muco-periosteum can be separated from the palate processes and drawn down so that the two flaps meet in the median line, thus lowering the arch. As the whole of the periosteum is drawn down, we have a depositing of new bone by the osteoblasts of the osteogenetic layer, and a formation of an entirely new palate.

In order to bring these flaps together it is not necessary, as formerly thought, to make incisions on either side, but by using the lead plates, held in place by silver sutures they can be drawn together and the freshened edges kept in place by coaptation sutures.

The lead plates serve a double purpose:

First.—They furnish surface for the sutures to draw upon.

Second.—They splint the palate, keeping the muscles from acting during healing.

This operation has other marked advantages over those where incisions are made.

First.—No large vessels are cut so as to cause hemorrhage and perhaps gangrene.

Second.—We have no thickening nor rigidity of the palate from cicatricial tissue. This does not matter so much in the hard palate as we have a firm bony vault, but in the soft it will interfere very materially with articulation.

Neither of these operations is attended with great mortality. Up to August, 1900, Dr. Brophy had operated two hundred and eleven times on infants with no deaths. Since then he has had three deaths, two of which, however, were due to infectious diseases contracted before but not presenting symptoms until after operation. Of three hundred and fifty-nine cases operated on later than six months, up to August, 1900, he had two deaths at three years.

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## Adrenalin in Dentistry.

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By CLYDE DAVIS, B.S., M.D., D.D.S., Lincoln, Neb.

*Read before the Colorado State Dental Association at Denver, Colo., June, 1903.*

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With one common and universal shudder, members of the human race shrink from the operations in dentistry and surgery, which are attended under ordinary circumstances with pain as a result of injury to living tissue.

They hail with delight the advent of any new means or remedy which even in a measure mitigates their suffering and again breathe with grateful hearts the words created by Dr. Oliver Wendell Holmes:

“Nature herself is working out the primal cause which doomed the tenderest of her creatures to the sharpest of her trials; but the fierce extremity of suffering has been steeped in the waters of forgetfulness, and the deepest furrow in the knotted brow of agony has been smoothed forever.”

It is to take advantage of this universal desire to escape suffering that we see about us the signs and advertisements of those who, with more or less truth, guarantee to cause no pain.

The members of the profession who style themselves the “ethical,” are wont to offset these claims by denying the truth of these statements, whereas, the writer believes that more time and labor should be spent in discovering methods and means whereby we may accomplish, if possible, the claims seen in public print, letting the results do the rest.

During December, 1902, it occurred to me that the extract of the suprarenal gland, as found in adrenalin chloride possessed some properties which might assist us in painless methods; namely, its power to contract protoplasm, capillaries, and all soft tissues, hence the ischæmia, following its use, which of itself is partial anaesthesia.

With these properties in mind experiments were begun, the astonishing results of which I am attempting to bring to the notice of the profession.

In pressure anaesthesia, for pulp extirpation, by any of the previous methods, I have found that the effect upon the dentine where exposure did not exist was not profound, and where exposure *did exist*, the pressure produced great pain caused by the attempt to force added fluid into the already over-charged pulp tissue. Again the usual hemorrhage caused the escape of my anaesthetic as fast as it could be applied, rendering further procedure in many cases impossible. Also, where pulp was finally removed it has been difficult to get a dry apical foramen, an essential to perfect and immediate root filling, due to the same cause, hemorrhage. Adrenalin in this connection seems to overcome all of these objections, rendering this operation painless, both in getting the exposure and the complete removal of all pulp tissue, as well as giving you a dry root canal for its entire length for immediate filling. My method is as follows:

**Painless Pulp Removal.**

Where *no* cavity exists, tap the enamel in a convenient place with a small bi-bevel drill, stopping when the dentine is reached. Enlarge this with a round bur as large as the ball burnisher you expect



to use in producing the pressure. Next, with your small drill held at right angles with surface you have attacked, which is parallel to the dentinal tubuli, sink a pit in the center of your previously formed cavity, stopping as soon as patient experiences any discomfiture. Dry the cavity with warm air and apply adrenalin with pressure, using raw vulcanite rubber as the stopper. This will contract the protoplasm within the tubuli, making space for the anæsthetizing and devitalizing agents which are to follow, assisting them to penetrate deeply into the dentine.

These consist of one drop of formaldehyde (40 per cent) and a quantity of cocaine. (I use Wyeth's 1-6 gr. compressed which are very small and contain little foreign substance.)

This makes a perfect solution and one which is most powerful and penetrating.

These are applied as before with pressure which is continuous rather than spasmodic.

Following this you can make near or complete exposure without pain, and your case is brought to where you find most of the cases when a cavity exists and you may proceed as follows:

Apply to the cavity one drop of adrenalin, 1-6 gr. tablet of cocaine, and a fraction of a drop of formaldehyde; produce pressure with a plug of raw vulcanite rubber, lightly but steadily at first, gradually increasing until pulp is thoroughly injected, but not throughout its entire length.

Next wipe cavity dry to remove surplus formaldehyde, as that forced through the foramen will produce periodontitis.

Now make complete exposure and remove contents of pulp chamber. Apply a drop or two of adrenalin and another cocaine tablet, make solution and apply pressure as before, using sufficient force to *eject* solution through foramen. The pulp can now be removed without hemorrhage, canals dried and filled.

The entire procedure should be accomplished without pain to the patient and when this is not the case it is due either to haste or lack of thoroughness, as all cases where semi-putrescence does not exist, can be easily removed painlessly.\*

The advantages of the use of this method are:

First.—The absence of pain during entire procedure.

Second.—Control of hemorrhage.

Third.—A dry root canal for subsequent filling.

Fourth.—Less percentage of subsequent periodontitis.

Fifth.—Color of tooth always preserved, the last two being advantages over the arsenical method.

\*The author apparently overlooks cases of calcified pulp, or pulp containing nodules.—EDITOR.

If by the method given we can make pulp exposure painlessly for the purpose of extirpation, we can obtund sensitive dentine for cavity excavation which I have done with very good results, and have as yet had no deaths of pulp following such use; however, the formaldehyde may be preserving those pulps, for the present, from putrefaction, and cases so treated may return later with their train of results. In using the method for sensitive dentine it must be borne in mind that only those tubuli whose ends have been dissected are affected, and the anaesthetic takes a direct course through these to the pulp, and not until the whole pulp has been affected will we be able to render non-communicative those tubuli yet unopened; hence any lateral cutting with bur would be invading new territory. From the foregoing it will be seen that it is important in getting the exposure to approach the pulp in a direct line following tubuli that have been opened to receive the treatment. Again the dentine overlying the horns of the pulp is the least dense with calcific matter and what was once the most sensitive portion of the cavity has been transformed into the least responsive.

But adrenalin has other uses the dentist and gen-

**Uses of Adrenalin.** eral surgeon should remember. I will but briefly call your attention to these, leaving the theoretical part of it for some subsequent time.

Adrenalin is a powerful cardiac stimulant, hence is indicated in poisoning from chloroform or ether.

Adrenalin is the ideal antidote for cocaine poisoning, and when combined with that drug neutralizes all toxic effects, and I have never seen any untoward results from the use of cocaine solutions, combined with adrenalin, though I frequently use a grain to one and one-half grains in operations about the face.

Adrenalin combined with local injections will render the field of operation comparatively bloodless and will localize drugs thereby multiplying many times the effects of cocaine used.

I would suggest the following mixture, as an anaesthetic in surgical work and tooth extraction, placing as much stress upon the method of mixing as upon the ingredients, as each has its important reason:

First.—In a small dish, as a salt cup, place one or two drops of water.

Second.—Add 1-6 grain compressed tablet of cocaine. Crush and stir till you get a clear solution.

Third.—Add 4 to 6 drops of adrenalin chloride.

Fourth.—Add witch hazel q. s. to fill hyperdermic syringe.

Inject as any other local anaesthetic is used.

This, as well as all other injections, is contra-indicated in close proximity to pus owing to the danger of extravasation of pyogenic bacteria,

when troublesome sequelæ are sure to result. Used judiciously and under proper conditions it is attended with less danger and subsequent soreness, while the anæsthesia is more profound than with any I have previously used.

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## A Plea for the Less Frequent Use of Arsenious Oxide in the Extirpation of the Dental Pulp.

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By Dr. FREDERICK S. MCKAY, Colorado Springs, Colo.

*Read before the Colorado State Dental Association, at Denver, Colo., June, 1903.*

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In 1836 Dr. Spooner, of Montreal, gave to the profession the use of arsenious oxid for pulp devitalization practically as we employ it today.

The progenitor of arsenical *pastes* was Dr. J. D. White, who in or about 1860, gave, or recommended, a paste composed of arsenious oxide, sulphate of morphia, and carbolic acid in proper proportions. In later years, notably at the present day, the use of the morphine salt has been superseded by the hydrochlorate of cocaine, and if we will stop a moment to study the action of arsenic on living animal tissues, we will see why it was found necessary to combine with the arsenic some drug which will, in a degree, if not wholly control the painful results of an application to the pulp, and it is this analysis of the action of the drug that is to bring us to a point I wish to make in this discussion.

**Action of Arsenic.** Arsenic produces death of a pulp by strangulation. That is to say, even a minute portion of the drug introduced into the pulp circulation produces a powerful irritation as is so often evinced by severe pain following its use, and there is an influx of blood to the part just exactly as there is to any part where irritation is present.

**Causes of Pain.** Why does a pulp become sometimes the seat of such excruciating pain after arsenic is applied? Let us remember first the minute size of the apical foramen restricting the volume of the blood current; secondly, "the ultimate nervous distribution immediately beneath the odontoblastic layer, forming a plexus which renders the whole surface of the organ highly sensitive when the blood supply is increased as the result of irritation;" also "the arrangement of the capillary circulation in loops which arise from the vertical vessels, which relation of the vessels lessens the tendency to diffusion of the inflammatory products;" and lastly the absence of lym-

phatic vessels which deprives the pulp of the power to remove inflammatory effusions or to convey insoluble drugs."\*

Failure also to discriminate between different pathological states of the pulp before applying the arsenic is productive of embarrassing situations to the operator in attempting to use arsenic.

Frequently the application of arsenic to a pulp brings about so great an irritation that the resulting pain causes a congestion of the surface of the organ to such an extent as to delay absorption of the drug.

Again, if there is any one form of irritation of which the dental pulp is intolerant, it is pressure, and if this point is overlooked, discomfort is pretty sure to follow.

When, however, the pulp is in a quiescent state at the time of medicating we find in favorable cases that at the end of one or two days the pulp may be successfully extirpated; but if the period is extended to four or five days the pulp seems to have regained its sensitiveness.

The probable explanation of this phenomenon is that the drug apparently paralyzes the nerves of the pulp without having acted deeper than the surface.

To return to our study of the action of the drug we find that the arterial hyperæmia first induced is followed by a venous hyperæmia, and it is this congestion that produces the strangulation of the vessels at the apex, the pulp literally cutting itself off, and the result is the breaking down of the pulp tissues.

**Arsenic Not a Pulp Preservative.** The opinion has seemed to obtain in the minds of some that arsenic acts as a preservative of pulp tissue and that the degree of preservation depends

upon the quantity of arsenic absorbed. To refute this theory we have only to look at the investigations of Dr. J. Foster Flagg, and if they can be taken as conclusive, we learn that in cases of pulp putrefaction examined by him there were those in which only a minute quantity of arsenic had been used.

So eminent an observer as Arkovy, who was the first to point out the effects of arsenic on pulp tissues, states (as published in the Transactions of the International Medical Congress in London in 1881) that there is positively no coagulation of the elements in the pulp, consequently the corpuscles of the blood break down; indeed the blood approaches a condition analogous to that of defibrination, and the substance of the dentine under certain conditions becomes infiltrated with a fluid which we know to contain besides other things certain organic salts of iron derived from the haemoglobin or coloring matter of the red blood cells, and these salts

\*American Text Book of Operative Dentistry, p. 294.



of iron which must be considered as the essential chromogenic factors, following decomposition of the blood, undoubtedly become sulphides, owing to the presence of hydrogen sulphide gas, which is a constant product of decomposition and acts here precisely as in the chemical laboratory, as a reducing agent.

The tooth assumes at first a pink color changing in a gradual gradation down through the yellows and browns to a gray or almost black, due to alterations in composition of the haemoglobin, new and definite chemical compounds being formed, each having distinct chromogenic properties.

It is readily apparent that such a cycle of changes taking place in a front tooth seriously alters the treatment of the case in hand and even presents an embarrassing predicament to the operator.

While in perhaps the majority of our cases the strangulation theory holds good and we find almost the entire pulp devitalized *en masse*, yet there are cases where we rely upon the slow progressive action of the poison to effect death of the organ and in those cases we frequently make several applications, at least more than one.

Now while in those cases of death by strangulation we expect the apical foramen to be mechanically occluded by thrombi or infarct, and so insure against any passing out of the drug into the peri-apical region or beyond, yet in the class of cases of which I have just spoken, the danger of progressive action into the peri-cementum becomes a subject for consideration, especially when we find canals of teeth to contain sensitive pulp tissue near the apex.

Again this danger is very great in immature teeth, and I think as a profession we generally recognize a danger in applying arsenic to any of the temporary teeth, although in my opinion arsenic may be applied in proper quantity and to remain a proper length of time with impunity in the temporary teeth, unless the operator is satisfied that the condition of affairs in any specific case makes such an application a dangerous procedure.

Probably no condition of the dental pulp offers more resistance to arsenic than that in which a nodular calcification more commonly known as pulp stones exists.

Another difficulty in the use of arsenic lies in the necessity of properly sealing it in.

My plan preferably is to use the oxy-chloride of zinc flowed into the cavity without pressure, but this is a precaution that we do not always find it convenient or even possible to take.

Where the cavity exists in an obscure or inaccessible place it may

be necessary to drill an entirely new cavity for the reception of the arsenic in some other portion of the tooth.

The results following the improper sealing of the drug and its egress out on to the gum and perhaps on to the process itself are too well known to need more than a passing mention, but I may point out the fact that in order to counteract any such action we must have recourse as soon as possible to a *freshly prepared* solution of the hydrated oxides of iron used both locally and in the stomach, if the poison has reached that organ.

Lest I may be misunderstood in the attitude I seem to have taken toward arsenic as a devitalizing agent I ask you to refer again to the title I have applied to this paper.

It is a plea for the less frequent use of the drug.

After the long and useful career of this drug in the hands of dentists we would naturally hesitate to cast it aside nor would I ask it, because there are cases in the *clientele* of every practitioner that could probably be handled successfully by nothing but arsenic. It is too valuable a drug to be cast aside, having nothing at the present day, so far as my knowledge goes, that could entirely take its place.

If we are then to discard in a measure the use of this agent, what shall we use to take its place?

I would most respectfully urge and most heartily **Pressure Anæsthesia.** recommend to your notice the practice of anæsthetizing the pulp under slight and gradual pressure by the use of cocaine. The technique of such an operation I take to be more or less familiar to you and so I will only mention that a syrupy solution of the crystals in a drop of water is applied over the exposure and pressure made with unvulcanized rubber.

After the actual operation of exposure and the first few pushes on the rubber we can almost promise the patient absolute painlessness. If, however, we penetrate beyond the anæsthetized area and arouse some sensation it is an easy matter to apply more cocaine exactly as at first. This it seems to me is a logical and rational way of treatment for a great number of cases, and in my hands has proved an invaluable mode of practice. So satisfactory has it been to me that I regard the application of arsenic as an unnecessary complication, at least I greatly prefer to try the cocaine first and if the case proves to be a stubborn one, I can still have recourse to arsenic.

In my last statement I admitted that there is a possibility of failure with the cocaine method, and so there is, but the percentage of failures is small.

In my own experience, in sixty-five cases recorded, I find eight failures.



## ITEMS OF INTEREST

This I do not concede to be any fault of the method, but lay the blame more at my own door in failing to recognize the different aspects and inflammatory stages present in the pulp and can conceive that a fruitful field of investigation would be in determining by microscopical examination just what conditions in a pulp make it resistant to the action of cocaine.

We sometimes hear reference made as though the method was more to be confined to the anterior teeth, but I can safely say that my own experience has shown an equal degree of satisfaction in dealing with bicuspids and molars. To sum up, the method has almost entirely suppressed the use of arsenic in my own practice.

Lately I have found that Dr. Tuller's cataphoric instrument serves admirably in bringing about anaesthesia.

A prominent member of our profession asks as relating to this question: "Who of us would consent to having a member, such as a finger or a leg, removed by any method that depended upon sloughing from the attachment?"

The answer is self evident.

So far as I have been able to learn, no word of opposition has been advanced to the method I have attempted to bring to your attention, I mean so far as any toxic symptoms or effects have been observed; but yet we hear our best operators discussing discolored and abscessed teeth following the use of arsenic. It seems to me then that the advantages to be gained by removal by the use of an anaesthetic are:

A better chance for removal of the pulp *en masse*.

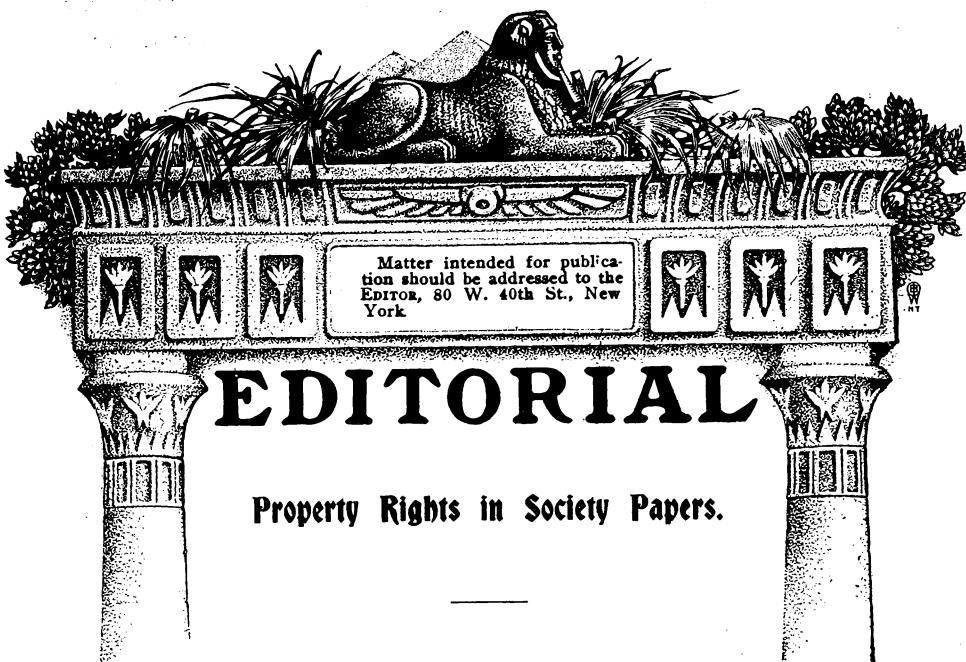
Less danger of subsequent tooth discoloration.

In most of cases less suffering by the patient.

Less danger of pericemental irritation or disturbance.

Less time consumed as a rule in effecting the removal of a pulp.

A better opportunity for immediate root filling, dependent upon the operator and choice of filling materials; and last, but not least, the elimination of the worry on the part of the operator if the patient does not appear at the appointed time for removal of the arsenic and the apprehension we sometimes feel concerning the possibility of escape of the drug on to the gum and surrounding tissues from those cavities which through difficulty of access or other physical conditions make the proper sealing of the drug in the cavity well nigh an impossibility.



Matter intended for publication should be addressed to the Editor, 80 W. 40th St., New York

# EDITORIAL

## Property Rights in Society Papers.

The ethical rules relative to society papers seem to be little comprehended, and being many sided may possibly be expounded with advantage to all concerned. The three main aspects of the question relate to the rights of the author, of the society, and of the publisher.

The author of a thesis is primarily the owner

**Author's Rights.** and except with his consent none of his rights pass from him. He needs no copyright, for prior to publication his manuscript is private property, and who takes it steals it. The larceny is petty or grand according to the value and circumstances. Where an author makes a definite agreement in regard to a manuscript of course the terms of the agreement hold and are easily interpreted. We are at present concerned rather with the unwritten rules governing the presentation of a paper before a meeting of members of a dental society.

The author being invited to present a paper, and agreeing to do so without further stipulation, in effect agrees that after reading his paper, his manuscript shall be handed to the Society's representative, usually the secretary, whereupon it becomes a part of the proceedings and as such

a part of the property of the Society. Consequently it rests entirely with the Society to choose an organ of publication, and in this the author rightfully cannot dictate. Should an author have a preference in the matter of publication, he should so state in advance of permitting his name to be printed on the announcement programmes, at which time, the manuscript being his own property, he may part with it on conditions of his own making. It is too late after reading the essay, for it then passes out of his ownership and therefore out of his control.

It has been stated above that an author is primarily the owner of his own manuscript. The same rule does not apply where the material is presented in the form of a lecture, or extemporaneously, and is taken by the Society's stenographer. The resultant manuscript is the product of work paid for by the Society and therefore the Society has even more right to its control than in the case of manuscript papers.

Unless distinctly stated in advance it is highly improper for an essayist to appear and speak extemporaneously. Such action not only borders on a courtesy, but it is a breach of that etiquette which binds a guest to make temperate use of his host's hospitality. Stenographers are paid in proportion to the quantity of their work, and are usually engaged to take note of business transactions and discussions. The Society having afforded an author an opportunity to present his paper before a body of professional men capable of discussing his subject, should not inflict the further expense of a stenographer to take down his words. Having done so it is more than reprehensible to demand that the report be sent to him for revision and then perhaps to keep the same for weeks or months. Where one is so particular about his papers, he should prepare them in advance.

All that occurs during a meeting of a Society **A Society's Rights to its Proceedings.** constitutes its proceedings, and as such becomes property which may be legally protected. This has been decided by the supreme court of the State of New Jersey, and that court was able to cite other decisions similar in character. Of course property rights cease with publication unless a copyright be taken. But prior to publication the Society owns outright all papers and discussions presented before it. It is entirely by courtesy that authors or those contributing to the discussions are given an opportunity to revise

manuscript or remarks prior to the printing of the same. It is a courtesy, however, which may rightly be extended to all who do not abuse it. Under this rule, when an author agrees to read a paper before a society, the society has a right to demand the manuscript as soon as read. It is also for the society to decide what journal shall publish its proceedings, and having done so it can prevent any other journal from printing its papers, even though a stenographer be sent to procure the same. But any journal may publish a report of the substance of either the papers or the acts of the Society, provided it does so in its own language.

Matter sent to a dental magazine from a Society

**The Publisher's Rights.** for publication becomes the literary property of the magazine on its acceptance of the same, of course

subject to such conditions as may have been mutually agreed upon, or else which may have been stipulated at the time of proffering the manuscript. Once accepted for publication neither the Society nor the author has the right to withdraw a paper nor to prohibit publication against the wish of the publisher. Were it otherwise, the publisher would be at the mercy of the whims of Society secretaries, and authors, who could recall papers after they had been set in type or after illustrations had been made. This would be manifestly unjust.

A right often claimed, the right to read proof, exists only in the aberrant minds of over-egotistic authors. The reading of proof is supposed to be for the purpose of making sure that the printer has correctly set in type the matter given to him. In all well regulated publishing houses that is all that proof reading is permitted to be. The type-setter must "conform to copy." Errors are corrected at his own expense. Editorial alterations in the proof is an entirely different matter for which extra charge is rightfully made. The printer cannot be expected to set in type, matter which exists only in some man's brains. Such changes are made by a magazine editor with due allowance for the expense involved, and are so managed as to minimize the time that will be required to make the alteration. If he thinks a word should be omitted, he replaces it if possible with another of equal length. Thus only a single line is reset. With the majority of authors receiving proof for correction, words and phrases are often introduced, or cut out, regardless of the fact that the words inserted or removed may mean the resetting of ten, twenty or even



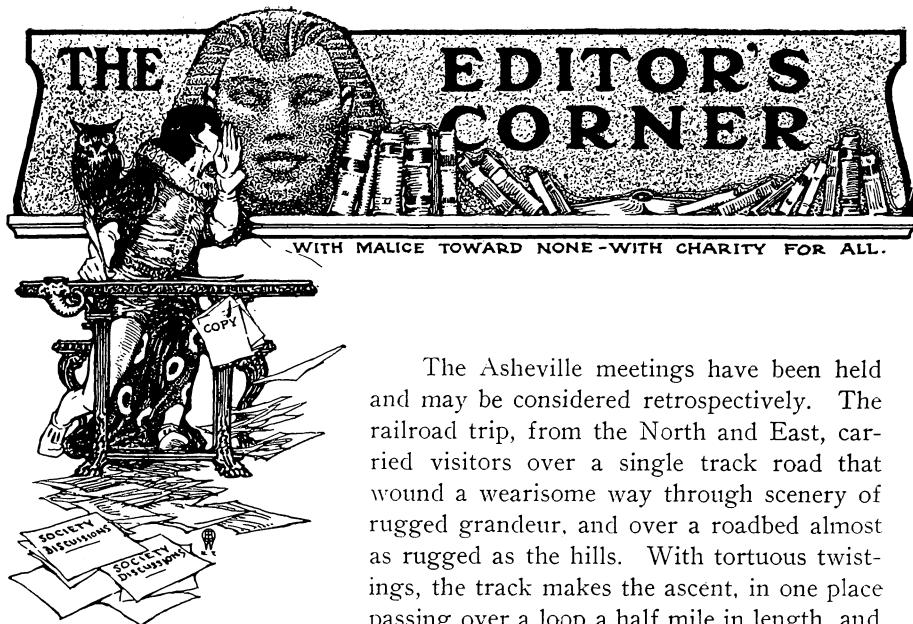


## ITEMS OF INTEREST

thirty lines. Moreover, they think nothing of holding proof **several days** or longer. It is for these and similar reasons that publishers are so loath to send out proof for correction.

The rules for the most satisfactory management of Society papers are very simple. The authors should carefully prepare their essays, have them typewritten, and then revise them into exactly the language they would desire to see in print. Society secretaries receiving manuscript not in proper condition for publication, should either return them to their authors for revision, or else have the corrections made by the Society editor. Under such circumstances the publisher becomes responsible for the accurate translation into type of the author's essay and it will not be requisite to send out proof sheets.





WITH MALICE TOWARD NONE - WITH CHARITY FOR ALL.

The Asheville meetings have been held and may be considered retrospectively. The railroad trip, from the North and East, carried visitors over a single track road that wound a wearisome way through scenery of rugged grandeur, and over a roadbed almost as rugged as the hills. With tortuous twistings, the track makes the ascent, in one place passing over a loop a half mile in length, and returning to the beginning of the circle, where a crossing of the rails occurs, one set being fifty feet above the other; a half mile journey to ascend fifty feet, a truly interesting bit of engineering.

### Asheville.

Asheville itself is an attractive and quaint town populated by a hospitable, courteous set of people whose single aim seemed to be to offer hearty welcome to visitors. The friendly greetings from strangers on the streets; apologies from clerks in the stores for unavoidable delays; the trolleys that stop when hailed by pedestrians a block away; the hotel servants who, though accepting, did not compel tips; these, coupled with the constant attentions from the reception committee of Asheville dentists, were all experiences as pleasing as they were novel to the men from crowded metropolitan cities.

The Battery Park Hotel, at which the various associations convened, is a picturesque pile, situated at the summit of a hill so steep that one must walk nearly a quarter of a mile over serpentine paths in order to ascend from the street to the hotel itself. Some idea of this hill may be gained from the following fact. The trolley cars take passengers at the street level from the Battery Park to the depot for five cents; there is a spur, however, up to a point near the level of the house on the hill and those who get aboard at that point pay twenty-five cents for the privilege. Moreover, they do so without grumbling.





## ITEMS OF INTEREST

The view from the piazza embraces a horizon crowded with hilltops and is unsurpassed by the similar views from the summits of Washington in the White Mountains, Katahdin in Maine, or the park in Montreal. Nor is there anything more attractive in the Adirondacks. Riding horses were obtainable at the livery stables, and many dentists could have been seen astride every morning between sunrise and breakfast time. Altogether Asheville proved an ideal place for holding a dental meeting, if one could only have arrived there by some means other than the railroad, of which the least said the better.

**The National Dental Association.** The attendance at the National Dental Association was surprisingly large considering its distance from centers of extensive population. The number of actual members present compared favorably with other years, though of course the visiting crowd was not so great as at Niagara meetings, to which Buffalo, Rochester, Toronto and other large cities contribute.

An amendment to the rules was adopted whereby the six sections were consolidated so that hereafter there will be but three. Under the new method papers are to be read in the sections, the main body of the Association to be regaled only by an occasional address, whatever that may mean. If these addresses prove to be as lugubrious as "addresses" usually are, it is conceivable that attendance at meetings of the full body will be slim indeed. Moreover, unless great care in selection of such orators be observed, the privilege of speaking before the full Association will become another plum in the gift of the politicians and will add to the growing dissatisfaction with the present system of government, this statement being directed against the mode, and not the men.

**The Council.** The transaction of the business of the present Association, by its Council, was inaugurated to supersede the constant controversies over unimportant matters which so long marred the meetings of the old Association. In so far as this has been accomplished, the scheme of having a Council has proven beneficial, and undoubtedly the work of the Council members is both onerous and thankless. So on their shoulders has been shifted that burden of listening to the wrangles of the wranglers, a burden under which the Association had long groaned. For their willingness to do this work, and for the sacrifice of their time, imposing upon them absence from the more interesting scientific sessions and presence at other meetings held when most of us are eating, drinking and merry-making, the Council should receive thanks.

But there is a flaw in the system which is serious. Under the rules no debates are permissible in meetings of the full body. The Council



## EDITOR'S CORNER

having considered a matter, makes report, and this report must be adopted or rejected, *without discussion*. Action by the Association therefore becomes a mere formality. The Council may make a report and a recommendation in regard to a subject with which the members are totally unfamiliar. If one who does understand the situation should wish to oppose the Council's report, he may move non-concurrence, but as he cannot give his reasons, the task of having such a report rejected is practically hopeless.

It is easier to criticise, however, than to propose a satisfactory solution. The old method disturbed the general meetings with prolonged and useless controversies which displaced orderly scientific discussions, and thus disgusted those who may have traveled long distances, hoping to contribute to, or profit by dental debates. The prevailing method gives into the hands of a few a power which should reside only in the Association itself; the power to formulate a resolution and to promulgate it as the action of the National Dental Association.

A possible way out of the difficulty appears to offer under the new rule, which compels the reading of papers in the sections only. We might now have at least one business meeting of the general body, at which the Council should report, and discussion of these reports could be permitted prior to voting thereon. This might be the meeting at which must occur the elections.

### Publication of the National's Proceedings.

The publication of the Association's proceedings proved to be quite a bone of contention in the councils of the Council. A great deal of dissatisfaction was expressed in regard to the manner of publishing in the past two years, and a strenuous effort was made to persuade the Council to recommend that the Association should publish a journal of its own. All the time-worn talk about and against "trade journals" was rampantly aired, but a few editors of "trade journals" were invited to express their views and did so with such frankness that the Council hesitated and decided to take a year to "think it over."

The printing of this year's proceedings then came up. One of those advocating that the National should have its own journal, declared that the printing of this material has come to be a valuable asset, "too valuable to be presented to the trade journals." The editor of *ITEMS OF INTEREST*, who was present, took an opposite view at the time, and desires now to explain to our readers publicly his reasons for not bidding for the privilege of publishing the proceedings of the National Dental Association.

In the first place he does not consider it a "valuable asset." The journal which accepts the right to publish, engages to set up, print and bind a fairly large edition of the *Transactions*, scarcely more than one-





## ITEMS OF INTEREST

third of the matter being available for journal purposes. A few of the papers read before the National, and "ordered printed," were above the average. One or two were very excellent. A number were of a character and quality below the average, or else outside of the policy of this magazine. We had the opportunity therefore of obtaining a very few papers suitable for ITEMS OF INTEREST, and in exchange would have been bound to devote much time, labor and money upon getting out the volume of Transactions, a price altogether beyond the value of this "asset." Moreover, we prefer to have our pages as free as possible from obligations so that they may be filled with matter which may be of our own selection, or prepared especially for us, and we may hint now that several writers are at work upon special matter for us, the early presentation of which would have been prevented had we undertaken the publication of the National's proceedings. We would like to have it known, therefore, that ITEMS OF INTEREST declined to make any offer whatever for the National's proceedings, even though there were some excellent papers which we would gladly have had.

### **The Southern's Proceedings.**

An innocent little amendment to the constitution came up for action. That is, it seemed innocent at first. This in effect declared that no journal should be permitted to publish any part of the National's proceedings except the one to which official permission was voted. This being an amendment to the constitution, necessarily came before the general meeting, and discussion was possible. Had it been a matter within the control of the Council, let us suppose that the Council might have made a favorable recommendation. Undoubtedly it would have been passed. It seemed so innocent, so proper! And without discussion no one would have grown wiser. But during debate on the proposed amendment it transpired that the passage of this rule would give to the National the control of publication of the proceedings of the Southern Branch. So soon as this became apparent, the amendment was promptly killed. This emphasizes the need of an abrogation of the constitutional clause which stifles discussion in general meeting.

### **Clinics and Commercialism.**

A prominent feature was the clinics. This is somewhat of an innovation, as time was when the National meetings were supposed to be above such mode of teaching. Many still believe that it is a mistake, yet it cannot be denied that a list of clinics, by men known to be competent, always increases the attendance, and for this reason, clinics, properly conducted, must help rather than harm the National. But there is a growing tendency on the part of executive committees to prepare *long* programmes rather than *good* ones. The printed announcements for the



## EDITOR'S CORNER

Asheville meeting included a paper from one man, who not only is not a member of the Association, but never can be, since he is not even a legal practitioner of dentistry. Among the clinicians were many who were simply demonstrating the use of materials for which they were also selling agents. The fact that some of these clinicians are, or have been dental practitioners, in no wise excuses the committees for giving them place on the scientific programme. It is not dishonorable for a man to engage in trade, should he so elect, but in that case he should see the propriety of taking his place with the other dealers, obtaining space for the exhibition of his wares by paying for it, as others do; having done this, he can of course show his goods by clinical demonstration, should he so desire. Nor is there any objection to an announcement on the programme, in its proper place, but this is not, or should not be, among the professional men who give demonstrations for the benefit of their fellows, and without hope of monetary reward.

While on this subject, there is another class of clinicians about whom we may offer a suggestion. There are men constantly seeking places on society programmes, who give demonstrations of methods, said demonstrations being lacking in some essential detail. The claim is then made that a *thorough* demonstration cannot be so publicly given, but that a private clinic might be arranged for the benefit of a "class," each member of which shall contribute a stated sum in cash. This kind of man has "something to sell," quite as much as the regular dealer, and this is another sort of commercialism that should be excluded from society meetings. If committees will arrange clinics in relation to quality rather than quantity, they will prove more attractive and certainly more professional.

The National Association of Dental Faculties

**National Association  
of  
Dental Faculties.** convened during the week prior to that set aside for the National Dental Association, and we present with this number a copy of a group photograph taken in the grounds of the Battery Park Hotel.

The most important occurrence during the meeting of this Association was the resignation of the Dental Department of the University of Harvard. The Faculties had adopted a rule requiring a four-year course of instruction. Harvard declined to thus increase its term, at the same time pointing out that their entrance requirements are higher than the standards set by the Faculties Association. The question received serious consideration, but however well founded the arguments of Harvard might be, it was manifest that the Faculties Association could not have one rule for that school and another for all others; therefore, not deeming it wise to rescind its action as to a four-year course, the resignation of Harvard was accepted.





In behalf of Harvard something must be said. This is a University Department, and consequently above the suspicion which always environs the so-called "proprietary" schools. The Faculty of Harvard therefore have no pecuniary interest in the sizes of its classes. Ergo, its action should at least be counted conscientious. The Dental Faculty have formulated a plan of entrance standards which will increase until within a few years their students will be required to hold the degree A.B. Then, and even before then, the entrance requirements, it is claimed, will compel a matriculant to pass examination upon many branches which some of the four-year schools will be teaching in their freshman year. With matriculants already finished with these studies, they claim that three terms of nine months each (27 months), will suffice for dental training, especially as some of the so-called four-year colleges will have sessions of only seven months (28 months in all) or only one month longer in the four years than Harvard will give in three.

**The National  
Association of  
Dental Examiners.**

With this number we offer a copy of a photograph of members of the National Association of Dental Examiners taken at Asheville. This Association passed one resolution of importance. One of the primary objects of this body, promulgated at its inception, was to work for an interchange of licenses between the States. From time to time a desultory attempt has been made looking towards a unification of statutes, which of course is practically an impossibility. At this year's meeting Dr. C. S. Stockton, of Newark, N. J., offered a plan providing for an interchange of licenses, at least between some of the States. A long discussion ensued but Dr. Stockton was ready with answers to all objections and finally obtained the vote on his resolution, which reads as follows:

*"Resolved*, That an interchange of license to practice dentistry be, and is hereby recommended to be granted by the various State Boards, on the following specific conditions:

"Any dentist, who has been in legal practice for five years or more, and is a reputable dentist of good moral character, and who is desirous of making a change of residence into another State, may apply to the Examining Board of the State in which he resides, for a new certificate which shall attest to his moral character and professional attainments, and said certificate, if granted, shall be deposited with the Examining Board of the State in which he proposes to reside and the said Board, in exchange therefor, may grant him a license allowing him to practice dentistry."

The chief advantage of this scheme of interchange is that it reaches at once just that class who have the best right to ask for interchange

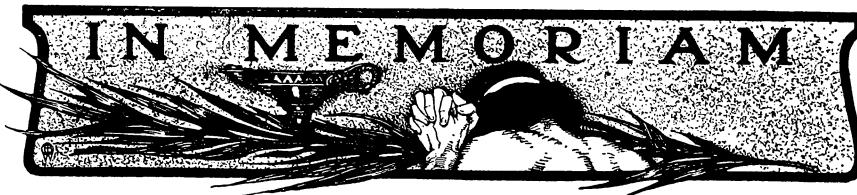


## EDITOR'S CORNER

without examination, viz.: those legitimately in practice for a number of years, or for a period long enough to render it a hardship to pass an examination. Moreover it in no way interferes with any college rights. Of course, this plan can become operative only in States where the law is such that the Board is invested with power to make such an interchange, but there are a number of these. Ohio and Indiana already announce that they will carry out the project. Others, it is to be hoped, will do the same, and if proven satisfactory, the laws of still other States may readily be amended to permit similar action.

The Inter-State Dental Fraternity, though so recently organized, created a surprise by its numerical strength at Asheville, nearly one hundred sitting around the board at its first annual meeting. About one hundred and fifty members had been enrolled prior to the Asheville meeting, and about fifty proposals for membership were received there. A full report of this meeting will appear in our pages later. The New York and New Jersey branches have combined and will jointly hold monthly meetings during the winter. The first will occur on the last Friday in October (unless otherwise arranged) and a dinner with very unique features is promised. It is expected that Fraternity members from several States will attend.





**William Cary Barrett, M.D., D.D.S., M.D.S., LL.D.,**  
**Dean of the Dental Department of the University of Buffalo.**

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My friend is dead! In a foreign country, at Nauheim, Germany, August 22, 1903, departed this life for a life eternal, Dr. W. C. Barrett, of Buffalo, N. Y.

Dr. Barrett sailed for Germany, accompanied by his wife and Dr. R. H. Hofheinz, his friend, to take treatment for an affection of the heart. During the past winter he had sustained a severe fall, injuring his arm and shoulder, and shortly afterward his heart began to trouble him, so he departed in June, full of hope that he would return this autumn to take up his work again in the society of his associates and friends. Vain hope, his work was done! The scenes of activity where he had worked so long and faithfully will never be gazed upon by him again.

His mortal remains have been brought to his native shores, but never more will we feel the warm hand-grasp of our friend nor look into his eyes nor hear his voice of welcome, whether at his home, in his rooms in the college, or in the Dental Society.

Dr. Barrett was nearly seventy years old, having been born May 13, 1834, in Monroe County, State of New York.\* None of his associates felt that he was even growing old. His step was so light, he was so active and cheerful in all the hours of private life and converse. It seems only yesterday that I saw him, and only a few days before his departure from Buffalo he had written in his vigorous, forcible way that he was going for health and recreation. And now—all is over, except our memories of him as he was: the bluff, generous, kindly, hospitable man.

I first saw him in 1875, a little more than ten years after he began to study dentistry. He was living in a little town then, and had already been president of his State Dental Society. I am not certain that he had joined the American Dental Association at that time, but very shortly afterward

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\*See appended paragraph at the end.



## IN MEMORIAM

he began to take an active interest in the meetings, and continued so to do up to the past year, 1902, at Niagara Falls, whence he went to Stockholm, Sweden, as one of the commissioners from the N. D. A., to tender an invitation to the *Federation Dentaire Internationale*, to hold the fourth International Dental Congress in St. Louis in 1904.

Dr. Barrett was elected president of the American Dental Association at Minneapolis in 1885, at the close of one of the largest meetings ever held in this country up to that date. I believe that no national meeting has been more largely attended, unless the meeting at Niagara Falls, in 1899, surpassed it in numbers.

Dr. Barrett was a forceful speaker and an energetic, enthusiastic worker. He acted as chairman of one or two of the sections for twenty years and read many interesting and learned reports and papers.

As he had entered the profession late in life, compared with most of us, he made up in the volume of his work in short order, and was always ready and eager to keep on working, working on the subjects which most interested him.

While acting as editor of the *Independent Practitioner* he did more to promulgate the views of W. D. Miller on the causes of decay of the teeth than any one single force in this country. He was a good editor, careful and painstaking; his proofs were well read and his journal always had something new in its pages. It was a source of great regret to the writer that he relinquished the editorial function. He had had training on a newspaper before he studied dentistry, which was of value to him; and afterwards, in the early years of his practice, he wrote for the press, when it was neither large nor the work lucrative. His papers bristled with his views on all topics, theory, practice, science, education, politics. He always wrote well, even though his editorials were sometimes long. He had views and opinions. He was aggressive, he was a good antagonist—as I had occasion to know—but he was my friend through it all. He never went around sneering at things you might have said or done; he said them to your face. He was firm to obstinacy when he thought he was right. He never straddled a question; he was on one side or the other.

Many times he repeated things to boys in school and before societies, but that was because he was a natural born teacher. It made its impression on the careless listener. He had a large vocabulary and was never at a loss for a word. He was a good debater, and, being a portly man, with a good voice, he could keep an audience awake and ever eager to hear more. He was never dry nor prosy. He surrounded the commonest topics with a bouquet of words so skilfully that you were compelled to listen. I have heard the polished Judd, the easy and graceful McQuillen, the enthusiastic Atkinson, the weighty Morgan, and many others speak





## ITEMS OF INTEREST

in our national halls, but Barrett could hold an audience as well as any of them.

He was well read and had a vast fund of information on nearly all topics; he was a good assimilator, he studied hard, worked early and late, but was not an investigator in its broadest sense. Many things he knew well, but he made no discoveries. He took the vast stores of information acquired by study and imparted much to others. He was always a fascinating teacher. He wrote a textbook on Pathology which is used in many schools. I will not say that it is the best book extant, but it is safe and it is full of valuable teachings.

He gave life and vim to the thoughts of others and added to them. He was a good reasoner. He was kind and liked to be in the company of those younger than himself. He enjoyed sports and travel at home and abroad. I have been with him on three of his visits to Europe. He always entered into whatever he was doing with prompt alacrity.

Many of the midnight hours have found him still at work. He belonged to numerous societies, both as an active and an honorary member; his push and energy and perseverance built up the school of which he was the head. He surrounded himself with the best men he could get. If he failed to agree with one of his teachers on some vital point, they separated. I always love a man who has enemies; there's good stuff in that man. Dr. Barrett had enemies. He built up the Foreign Relations' Committee in the National Faculties' Association, and now he is gone. Let his successors try to keep up the pace he set.

You will always find that envy has a great deal to do with hindering what is called impartiality. Barrett was as nearly just as it is possible for a man to be who is in the field of politics. He was strictly honest, and his friendship knew no bounds. He was large hearted and was a collector of books, guns, swords, music, and of specimens of comparative anatomy.

After talking to him and with him for five or six hours three or four nights in a week, I was always amazed that I had not exhausted his knowledge on subjects dear to me.

If he had a contempt for a man or an idea, he was very likely to express his views. He was not ironical nor given to saying bitter things of persons or men. He hated shams and pretenses, and always did his part in exposing them. He had the courage of his convictions (which is more than can be said of some people living and dead), and in consequence of his outspokenness there were many carping critics.

He was a close attendant on the meetings of various associations, and liked to gather three or four intimates in his rooms or visit theirs and talk far into the night. He was very serious in his demeanor before stu-



## IN MEMORIAM

dents and very impressive with them. He believed thoroughly all that he said to them. He was interested in the affairs of citizenship and devoted much time to public matters. When his college or other duties permitted, he was to be found in his home surrounded by his friends.

Dr. Barrett was a man of commanding presence, more than six feet three inches in height and weighing, perhaps, 250 pounds. He could not come into a room without attracting attention on account of his size and the quickness of his movements.

While he was in the midst of political workers he was never a good politician himself. He was argumentative, even prolix in some of his papers and discussions, still I always felt that he generally made his point, or, if he did not, his position had been clearly stated.

I do not think he will soon be forgotten, because he was a strenuous advocate for the things in which he believed. Many of the familiar faces of the past thirty years in our national gatherings have faded from our midst—Atkinson, Buckingham, Morgan, Winder, McKelops, Wetherbee, Cushing, Hunt, Allport, Eames, Catching, McQuillen, Abbott, and others—and today we are called upon to mourn the loss of one who had endeared himself to a large circle of personal and private professional friends, and whose name was equally well known throughout the world as one of the vanguard of earnest teachers and whose whole professional life was devoted to elevating the standard of his profession.

We can say now at the close of this brief and hasty tribute that we feel a personal sense of loss in the demise of our friend, who filled such a large place in the professional world and whose taking away causes "countless thousands to mourn."

We tender our sincere condolence to his grieving family.

Chicago, Sept. 15, 1903.

A. W. HARLAN.

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Dr. Barrett was educated in the common schools of his native State and at the Kingsville Academy, Ohio, Cary Seminary, and Gates Academy, New York. He engaged in teaching and newspaper work until he was 30 years of age. He began the study of dentistry in 1864 and took the examination for the M.D.S. degree in 1868. He practiced in Warsaw, New York, for ten years and then removed to Buffalo. He graduated from the Pennsylvania College of Dental Surgery in 1880 and from the Medical Department of the University of Buffalo in 1881. The degree of LL.D. was conferred on him by the Lake Forest University in 1899. He was Professor of Dental Pathology and Comparative Dental Anatomy in the Chicago College of Dental Surgery, Professor of the Principles and Practice of Dentistry and Oral Pathology in the Dental





## ITEMS OF INTEREST

Department of the University of Buffalo, and Dean of the college at the time of his decease.

He was a member of the International Medical Congress, London, 1881; Washington, 1887; Berlin, 1890; member of the National Dental Association, American Medical Association; honorary member of various local and State societies; Delta Sigma Delta Fraternity; editor of the *Independent Practitioner* 1882 to 1888, the *Dental Practitioner*, Buffalo, 1893-8; author of a textbook on Oral Pathology, now in its second edition, and of numerous papers and brochures.

Dr. Barrett was married in 1857 to Miss Ryerse, of Ontario, who survives him. They had no children.

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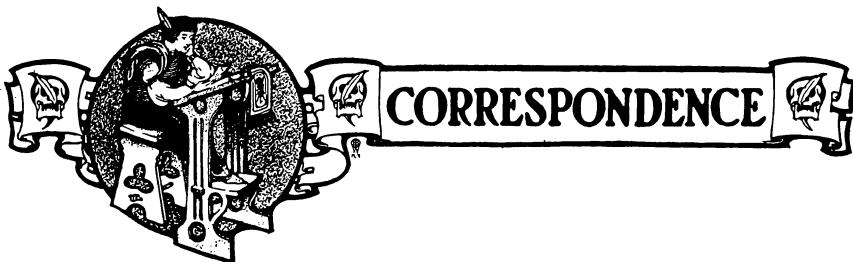
### Dr. G. W. Wertz.

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Dr. G. W. Wertz, aged 56, died at his home, 1615 Douglas street, Omaha, Neb. Dr. Wertz was born in New Castle, Pa., from which place he removed to Kansas City, Mo., and later came to Omaha in 1878. He was a charter member of the Nebraska State Dental Association, and for many years an active member of the American Dental Association. He was also a Scottish Rite Mason and member of Camp 16, Woodmen of the World. He leaves a widow and one son, G. Deal Wertz of Kansas City, Mo.

Dr. Wertz had an extensive acquaintance in Omaha and stood high among his fellow citizens, who will be grieved to learn of his death.





## A Correction.

To the Editor of ITEMS OF INTEREST.

DEAR SIR: In the report of my paper in the September ITEMS OF INTEREST, I find a few errors which I would like to have corrected, if possible.

Corresponding to the 13th line on page 692 I had used the word "morsal" instead of the word "incisive" which there appears. I meant to include bicuspids and molars as well as anterior teeth.

Lines 22 to 25 on page 693 do not bring out an idea which I insist upon. This is that a sufficient thickness of porcelain should be provided between the labio-gingival bend of the anchor wire as it emerges from the axillary groove and the incisal edge of the filling.

Again, I insisted on the fact that the horizontal lingual axillary groove might have to be placed farther than  $3/32$  of an inch from the incisal edge if that position brought the impact of an antagonizing incisal edge on either margin of the groove, because danger would then result for the natural enamel forming such margins. If such slight shifting of the position of the axillary groove brought the impact of an antagonizing incisal edge right in the center of the filling placed in the groove the anchorage would tend to be strengthened, rather than otherwise. Lines 26 to 30 on page 693 do not bring out the above ideas.

On the same page, line 34, might convey the idea that the entire cement left in the groove after setting the inlay would be burred away. This would be thoroughly impractical and would defeat the object in view. I had talked of a "veneer" of cohesive gold in that connection.

Hoping that your space may permit the insertion of the above and thereby correct any misconception which might otherwise arise, I am,

Yours cordially,

JULES J. SARRAZIN.

New Orleans, September 15, 1903.





# SOCIETY ANNOUNCEMENTS

## Fourth International Dental Congress.

Committee of Organization of Fourth Dental Congress—H. J. Burkhart, Chairman; E. C. Kirk, Secretary; R. H. Hofheinz, Wm. Carr, W. E. Boardman, V. E. Turner, J. Y. Crawford, M. F. Finley, J. W. David, Wm. Crenshaw, Don M. Gallie, G. V. I. Brown, A. H. Peck, J. D. Patterson, B. L. Thorpe.

The Department of Congresses of the Universal Exposition, St. Louis, 1904, has nominated the Committee of Organization of the Fourth International Dental Congress—to be held in August, 1904, in connection with the Exposition—which was appointed by the National Dental Association, and has instructed the committee thus appointed to proceed with the work of organization of said Congress.

Pursuant to the instructions of the Director of Congresses of the Universal Exposition, 1904, the Committee of Organization presents for your consideration and information the subjoined outline of the plan of organization of the Dental Congress.

The Congress will be divided into two departments: Department A—Science (divided into four sections). Department B—Applied Science (divided into six sections).

### DEPARTMENT A—SCIENCE.

1. Anatomy, Physiology, Histology, and Microscopy. Chairman, M. H. Cryer.
2. Etiology, Pathology, and Bacteriology. Chairman, R. H. Hofheinz.
3. Chemistry and Metallurgy. Chairman, J. D. Hodgen.
4. Hygiene, Prophylaxis, Therapeutics, Materia Medica, and Electro-therapeutics. Chairman, A. H. Peck.

### DEPARTMENT B—APPLIED SCIENCE.

5. Oral Surgery. Chairman, G. V. I. Brown.



## SOCIETY ANNOUNCEMENTS

6. Orthodontia. Chairman, E. H. Angle.
7. Operative Dentistry. Chairman, C. N. Johnson.
8. Prosthesis. Chairman, C. R. Turner.
9. Education, Nomenclature, Literature, and History. Chairman, T. W. Brophy.
10. Legislation. Chairman, Wm. Carr.

### COMMITTEES.

The following committees were appointed:

Finance—Chairman, C. S. Butler. Programme—Chairman, A. H. Peck. Exhibits—Chairman, D. M. Gallie. Transportation—(To be appointed.) Reception—Chairman, B. Holly Smith. Registration—Chairman, B. L. Thorpe. Printing and Publication—Chairman, W. E. Boardman. Conference with State and Local Dental Societies—Chairman, J. A. Libbey. Dental Legislation—Chairman, Wm. Carr. Auditing—(Committee of Organization.) Invitation—Chairman, L. G. Noel. Membership—Chairman, J. D. Patterson. Educational Methods—Chairman, T. W. Brophy. Oral Surgery—Chairman, G. V. I. Brown. Prosthetic Dentistry—Chairman, C. R. Turner. Local Committee of Arrangements—(To be appointed.) Essays—(To be appointed.) History of Dentistry—Chairman, Wm. H. Trueman. Nomenclature—Chairman, S. W. Foster. Promotion of Appointment of Dental Surgeons in the Armies and Navies of the World—Chairman, Wm. Donnally. Care of the Teeth of the Poor—Chairman, Thomas Fillebrown. Etiology, Pathology and Bacteriology—Chairman, R. H. Hofheinz. Prize Essays—Chairman, James Truman. Oral Hygiene, Prophylaxis, Materia Medica, Therapeutics and Electro-therapeutics—Chairman, A. H. Peck. Operative Dentistry—Chairman, C. N. Johnson. Resolutions—Chairman, J. Y. Crawford. Clinics—Chairman, C. E. Bentley. Nominations—(To be appointed.) Local Reception Committee—(To be appointed.) *Ad interim*—Chairman, G. V. I. Brown.

The officers of the Congress, president, vice-presidents, secretary and treasurer, will be elected by the Congress at large at the time of the meeting, and will be nominated for the several positions by the nominating committee.

The Fourth International Dental Congress, which will be held August 29 to September 3 inclusive, 1904, will be representative of the existing status of dentistry throughout the world. It is intended further that the Congress shall set forth the history and material progress of dentistry from its crude beginnings through its several developmental stages, up to its present condition as a scientific profession.

The International Dental Congress is but one of the large number of congresses to be held during the period of the Louisiana Purchase Ex-





## ITEMS OF INTEREST

position, and these in their entirety are intended to exhibit the intellectual progress of the world, as the Exposition will set forth the material progress which has taken place since the Columbian Exposition in 1893.

It is important that each member of the dental profession in America regard this effort to hold an International Dental Congress as a matter in which he has an individual interest, and one which he is under obligation to personally help toward a successful issue. The dental profession of America has not only its own professional record to maintain with a just pride, but, as it is called upon to act the part of host in a gathering of our colleagues from all parts of the world, it has to sustain the reputation of American hospitality as well.

The Committee of Organization appeals earnestly to each member of the profession to do his part in making the Congress a success. Later bulletins will be issued setting forth the personnel of the organization and other particulars, when the details have been more fully arranged.

H. J. BURKHART, Chairman,  
E. C. KIRK, Secretary.

Approved:

HOWARD J. ROGERS, Director of Congresses.

DAVID R. FRANCIS, President of the Exposition.

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### Minnesota State Board of Dental Examiners.

The next meeting of the Minnesota State Board of Dental Examiners will be held Oct. 6 at the Dental Department of the State University at Minneapolis, Minn.

Candidates should bring their diplomas, also instruments for insertion of a gold filling.

F. E. MOODY, Pres.,  
Minneapolis, Minn.

C. H. ROBINSON, Sec'y,  
Wabasha, Minn.

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### Sixth District Dental Society of the State of New York.

The thirty-fifth semi-annual meeting of the Sixth District Dental Society of the State of New York will be held at Norwich, Chenango Co., N. Y., on October 8 and 9, 1903.

Binghamton, N. Y.

FREDERIC W. McCALL, Sec'y.



## **Southwestern Iowa Dental Society.**

The Southwestern Iowa Dental Society will hold their seventh annual meeting at Albia, October 13 and 14.

Creston, Iowa.

J. A. WEST, Sec'y.

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## **The Illinois State Board of Dental Examiners.**

The next regular meeting of the Illinois State Board of Dental Examiners, to examine applicants for license to practice dentistry in this State, will be held in Chicago October 15, 16 and 17, 1903.

The following are eligible to take the examination before the Board: "Anyone holding a medical diploma from a reputable college; anyone who has been a legal practitioner of dentistry for ten years prior to moving into the State, and anyone who failed to register in this State at the time the law went into effect, which was in 1881."

Candidates must furnish their own patients and come provided with the necessary instruments, rubber dam and gold to perform practical operations and such other work as is deemed advisable by the board. Those desiring to take the examination should matriculate with the secretary at least ten days before the date of meeting. The examination fee is \$10. Any further information can be obtained by addressing the secretary.

J. G. REID, D.D.S., Sec'y, 1204 Trude Bldg., Chicago.

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## **State Board of Registration and Examination in Dentistry of New Jersey.**

The State Board of Registration and Examination in Dentistry of New Jersey will hold their semi-annual examination in the Assembly Room of the State House at Trenton, N. J., on October 20, 21 and 23, 1903.

All applicants are required to file their application with the secretary ten days prior to the examination.

Sessions beginning promptly at 9 a. m. each day.

For information in regard to examination kindly communicate with the secretary, 29 Fulton street, Newark, N. J.

Fee for examination \$25.

CHAS. A. MEEKER, Sec'y of Dental Commission.





## **Massachusetts Board of Registration in Dentistry.**

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A meeting of the Massachusetts Board of Registration in Dentistry, for the examination of candidates, will be held in Boston, Mass., Oct. 28, 29, and 30, 1903.

Candidates who have applied for examination will report to the secretary, Wednesday, October 18, at 9 o'clock a. m., at Tufts College Dental Infirmary, corner Huntington and Rogers avenues, and come prepared with rubber-dam, gold, plastic filling materials and instruments, to demonstrate their skill in Operative Dentistry. Any one who wishes may bring his patient. So far as possible patients will be furnished. The Board in every instance selects the cavity to be filled. Partially prepared cavities never accepted.

The theoretic examination—written—will include operative dentistry, prosthetic dentistry, crown and bridge work, orthodontia, anatomy, histology, surgery, pathology, *materia medica*, therapeutics, physiology, bacteriology, anesthesia, chemistry and metallurgy, and will be held at Civil Service rooms, State House, from Thursday, October 29, at 9.30 a. m., until Friday p. m., October 30.

All applications, together with the fee of twenty dollars, must be filed with the Secretary of the Board on or before October 21, as no application for this meeting will be received after that date.

Every candidate for examination must be twenty-one years of age.

Application blanks may be obtained from the secretary.

Candidates who have taken an examination, and failed, and desire to come before the Board again at this meeting, are not required to fill out a second application blank, but must notify the secretary as above in order to be examined. The fee for third and subsequent examinations is \$5.

G. E. MITCHELL, D.D.S., Secretary.

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## **National Association of Dental Examiners.**

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On account of the resignation of Burton L. Thorpe, D.D.S., president of this association, James G. Reid, D.D.S., of 1204 Trude building, Chicago, Ill., will assume the duties of the president.

CHARLES A. MEEKER, D.D.S., Secretary.



## **Northeastern Dental Association.**

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The ninth annual meeting of the Northeastern Dental Association will be held in the New Horticultural Hall, corner Massachusetts and Huntington avenues, Boston, Mass., Oct. 21, 22, 23, 1903. An interesting and profitable meeting with a full line of exhibits is promised. Boston is an ideal place for a large meeting. Please come and help make it so.

EDGAR O. KINSMAN, Secretary.

CAMBRIDGE, MASS.

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## **Southern Illinois Dental Society.**

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The eleventh annual meeting of the Southern Illinois Dental Society will be held in East St. Louis on October 13 and 14, 1903. An interesting programme is assured, and all ethical members of the profession are cordially invited to be present.

HARRY K. BARNETT, Secretary,  
Upper Alton, Illinois.

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## **Dental Commissioners of Connecticut.**

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The Dental Commissioners of the State of Connecticut hereby give notice that they will meet at Hartford, on Wednesday, Thursday and Friday, November 18, 19 and 20, 1903, respectively, to examine applicants for license to practice dentistry, and for the transaction of any other proper business.

The practical examination in operative and prosthetic dentistry will be held Wednesday, November 18, at 9 a. m., in Putnam Phalanx Armory, corner Haynes and Pearl streets.

The written theoretic examination will be held Thursday and Friday, November 19 and 20, at the Capitol.

All applicants should apply to the Recorder for proper blanks, and for the revised rules for conducting the examinations.

Application blanks must be carefully filled in and sworn to, and with fee, \$25, filed with the Recorder on or before November 10, 1903.

By direction of the Dental Commissioner.

Wallingford.

J. TENNEY BARKER, Recorder.





## **The Texarkana Dental Society.**

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The dentists of Texarkana, Arkansas and Texas have organized a society known as The Texarkana Dental Society and are progressing nicely. The following is a list of officers and members: P. A. Skeen, president; T. A. Sims, vice-president; A. E. Chambers, secretary and treasurer; J. B. Reed, F. D. Bittle, J. L. Mosely, L. W. Dancy, A. Crossley, of Atlanta, Texas.

A. E. CHAMBERS, Sec'y.

Texarkana, Ark.

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## **National Association of Dental Examiners.**

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At the meeting of the National Association of Dental Examiners held at Asheville, N. C., July, 1903, the following officers were elected: Burton Lee Thorpe, 3666 Olive street, St. Louis, Mo., president; James J. Ried, Chicago, Ill., first vice-president from the West; J. Tenny Barker, Wallingford, Conn., second vice-president from the East; T. B. Whitney, Salem, Ala., third vice-president from the South; Charles A. Meeker, 29 Fulton street, Newark, N. J., secretary and treasurer.

Newark, N. J.

CHAS. A. MEEKER, Sec'y.

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## **Maryland State Board of Dental Examiners.**

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The Maryland State Board of Dental Examiners will meet for examination of candidates on November 4 and 5, 1903, at the Baltimore College of Dental Surgery, Baltimore, at 9 a. m. For application blanks and full particulars apply to the secretary.

F. F. DREW, D.D.S., Sec'y.

901 N. Howard street, Baltimore, Md.

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## **National Association of Dental Examiners.**

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It is earnestly requested that all the secretaries of the Boards of Examiners throughout the States and Territories mail to the secretary all changes in their respective Boards and greatly oblige,

CHAS. A. MEEKER, D.D.S., Sec'y, 29 Fulton street, Newark, N. J.



## The Seventh and Eighth District Dental Societies of the State of New York.

The thirty-fifth annual union meeting of the Seventh and Eighth District Dental Societies of the State of New York will be held at the Osburn House, Rochester, N. Y., October 27, 28, and 29, 1903. A most excellent meeting with numerous clinics is promised. One day will be devoted exclusively to clinics with discussions of same in evening. Application has been made for reduced railroad rates. Exhibitors desiring space are requested to communicate with the hotel or the Business Committee.

An incomplete programme follows:

### PAPERS.

I. L. M. Waugh, Buffalo, N. Y., Histology of Dentine, illustrated with lantern slides.

C. W. Stainton, Buffalo, N. Y., subject to be announced.

Harry L. Belcher, Buffalo, N. Y., subject to be announced.

J. W. Beach, Buffalo, N. Y., New Remedies.

Robert Brewster, Chicago, Ill., The Avoidance of Opacity in Porcelain Inlays, and the Use of Oil Colors in Porcelain Work.

A. Osgood, Bath, N. Y., The Vacuum Chamber.

L. S. Goble, Rochester, N. Y., Practical Sterilization for the Dentist.

### CLINICS.

Robert Brewster, Chicago, Ills., (a) Building Porcelain Inlay Entirely of One Body, (b) Building Porcelain Inlay Using Different Layers and Colors, (c) Demonstrate the Use of Oil Colors in Porcelain Work, (d) Demonstrate the Swaging Method of Making Matrices.

A. S. Barnes, Oneonta, N. Y., Partial Dentures.

C. H. Land, Detroit, Mich., (a) Porcelain Veneers for Cement and Gutta-Percha Fillings, (b) Porcelain Veneered Incisors and Entire Artificial Enameling Over Defective Teeth That Is Thoroughly Practical and Durable Without the Necessity of Pulp Destruction.

H. H. Tompkins, Utica, N. Y., A New Engine Bur for Inlay Work.

I. C. Edington, Rochester, N. Y., The Use of Vulcanizable Gutta-Percha in Plate Work.

F. M. Rood, Rochester, N. Y., The Use of a Screw to Support Pulpless Teeth.

G. B. Mitchell, Rochester, N. Y., Preparation of Cavity and Matrix for Porcelain Inlays.

C. W. LaSalle, Rochester, N. Y., Aluminum Lining for Rubber Plate.

A. E. Sager, Rochester, N. Y., Dr. D. D. Smith's Method in Oral Prophylaxis.





C. C. Bachman, Waterloo, N. Y., Putting New Porcelain Facings on Bridge Work in the Mouth.

C. W. Cochran, Erie, Pa., Porcelain Jacket or Enamel Crown.

R. W. McDonald, Erie, Pa., Porcelain Dowel Crown Using Brewster's Body.

C. C. Sanbach, Scranton, Pa., (a) Porcelain Work Using Jenkins's Furnace, (b) Demonstrating Use of DeTrey Gold.

H. W. Arthur, Pittsburg, Pa., Readily Made Matrices and Their Application.

C. H. Reynolds, Strathroy, Ontario, Canada, Microscopical Specimens From the Mouth.

G. Evans, New York, Method of Forming Close Fitting Crown; Posts and Cementation of Crowns and Bridges With Gutta-Percha Cement.

L. W. Ballard, Alliance, Ohio, Country Dentists Make-Shifts.

W. E. Jackson, New Castle, Pa., Porcelain Faced Gold Caps for Bicuspid and Molars.

A. McAlpin, Bradford, Pa., Anchor Screws and a New Chuck for Inserting Them.

H. C. Webb, Syracuse, N. Y., Simple Method of Regulating With a Rubber Appliance.

J. B. Snyder, Bryan, Ohio, Partial Restoration of Incisors, Using Electric Mallet and Gold and Platinum Folds.

C. F. Bunbury, Rochester, N. Y., Partial Lower Dentines.

J. J. Schimpf, Philadelphia, Pa., will demonstrate Hammond Furnace, Using S. S. White's High-Fusing Porcelain Body.

C. E. Wettlaufer & Bro., Buffalo, N. Y., Inlays.

E. B. Spalding, Detroit, Mich., An All Porcelain Jacket Crown, or the Natural Enamel Replaced by Porcelain.

The subjects of the following to be announced :

J. L. R. Heichhold, Clearfield, Pa.

A. R. VanVleck, Hudson, N. Y.

L. C. Jones, Wolcott, N. Y.

A complete programme will be issued on October 13.

W. W. SMITH, Chairman Business Committee,  
63 East Ave., Rochester, N. Y.

